The 2010 SASP has been provided to you by Dr. Carson Wong

2010

SASP

AUA Self-Assessment Study Program

American Urological Association
Education and Research, Inc.

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American Urological Association Education and Research, Inc.
Office of Education

2010 Self-Assessment Study Program

Part I - Questions

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2010 AUA Self-Assessment Study Program

Accreditation: The American Urological Association (AUA) is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to provide continuing medical education for physicians.

The AUA takes responsibility for the content, quality, and scientific integrity of this CME activity.

Credit Designation Statement: The American Urological Association designates this educational activity for a maximum of 20.0 *AMA PRA Category 1 Credits™*. Each physician should only claim credit commensurate with the extent of their participation in the activity.

Estimated time for study, test completion, and reference reading for each SASP is 20 hours.

Original Release Date: January 2010 **Expiration Date**: December 2012

Target Audience: This self-assessment program is designed for practicing urologists, Board candidates, and/or residents.

Purpose/Need: Urologists and other health care providers need to assess their knowledge of urology. Identified gaps in this knowledge can lead to individualized, practical educational activities, which will result in improved patient care.

Learning Objectives: After completion of this continuing medical education activity, including this examination, participants will be able to:

- assess their knowledge of urology
- demonstrate an increased knowledge base of urology
- apply increased knowledge to improve quality of patient care
- evaluate strengths and weaknesses in urology upon review of their personalized participant profile
- develop a personalized study program
-

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Self-Assessment Study Program

INTRODUCTION

This Self-Assessment Study Program is designed to provide practicing physicians, Board candidates, and/or residents with an assessment of their knowledge of urology and to be a valuable learning experience which should add significantly to their store of knowledge and through this improve the quality of care delivered to their patients. Relative strengths and weaknesses in urology will be immediately apparent upon review of the personalized Participant Profile. All data concerning results of the Study Program are strictly confidential and elaborate security measures have been set up in the Office of Education to ensure that only the individual participant has access to his scores.

The Self-Assessment Study Program may be completed under either closed book or open book test conditions. We urge you to select the examination condition with which you are most comfortable. Open book implies the use of references and other resource materials. Closed book implies that reference material is not used. To ensure a fair comparison, peer group reports are compiled separately for the "open book" and "closed book" groups.

Remember, the purpose of the program is self-assessment and learning, **NOT** an evaluation of you by the American Urological Association or any other agency. The examination is designed to be a valuable learning experience as well as a self-evaluation and therefore is considered to be a valid measure regardless of open or closed book conditions.

The examination items require a recall of medical knowledge and application of clinical experience. Take time to consider each item carefully. We strongly recommend blocking out three to four hours to take the examination in one, or at most, two sittings. Do not stretch the examination over multiple sessions. You should select one answer that you feel is the best.

Immediately after completion, return your answer sheet to the AUA Office of Education. **EACH MONTH** answer sheets will be scored and personalized Participant Profiles will be compiled and mailed along with a Certificate of Completion for CME credit.

At the end of the year, peer group reports will be compiled. In order for your scores to be included in the peer group data, your completed answer sheet must be in the Office of Education before October 1, 2010. After the final monthly scoring, peer group reports will be sent to all participants who returned an answer sheet. Included in this report will be an overview of your personalized Participant Profile.

Finally, we hope that you find the Self-Assessment Study Program to be a stimulating, informative, and beneficial tool for Continuing Education as you strive for high-quality patient care.

INSTRUCTIONS

PLEASE READ CAREFULLY

I. ASSEMBLE MATERIALS

1) SASP PART I: 150 multiple-choice questions (front section of book).
   SASP PART II: Explanations, comments, and references (back section).
2) Answer Sheet: Two return address tabs should be attached to the bottom.
3) A No. 2 Pencil: Answer sheets completed in ink will be returned unscored.
4) Exam Trustee Envelope: Should include protective cardboard.

II. PREPARE YOUR ANSWER SHEET

Please note: The stamped answer sheet tracking number (not to be confused with your AUA Customer ID Number) is used by AUA Staff during scoring.

1) **Identification Information.** Complete the information by writing in numbers and blackening the corresponding grid numbers.

   A. **Years Out:** Write the number of years since you completed residency training. If this is less than 10 years, the first digit will be "0". If you are currently in residency, record this number as "99".
   B. **Up to 20 CME Credits**: Please mark the number of credits you wish to claim.
   C. **Book Year:** Write "10" here.
   D. **AUA ID Number:** Using two leading zeros, write your 6-digit AUA customer ID number here.
   E. **Date:** Write the date you take the exam.
   F. **Teaching Load**:
   None indicates the participant devotes all of his time to private practice. Although he may have a clinic appointment with a medical school in the area, there is no interface with medical students, residents, or interns.
   Light indicates the participant devotes the majority of his time to private practice; however, he also has a faculty appointment which requires that he participates in rounds, conferences, or lectures approximately 5-10 times per year.
   Medium indicates the participant, in addition to private practice, has an active teaching service which requires at least weekly contact with medical students, residents, or interns.
   Heavy indicates the participant devotes the majority of his time to a faculty appointment which includes daily contact with medical students, residents, or interns in the capacity of teaching or supervising their activities.
   G. **Exam Type:**
   Open book indicates that reference material will be used during the exam.
   Closed book indicates that no reference material will be used during the exam.

2) **Return Address Tabs.** Please use a permanent address when completing these tabs. Do not detach from answer sheet. One tab will be used to send your personalized Participant Profile. The other will be used to send your Peer Group Report in late 2010.

III. BEGIN THE EXAMINATION

1) Note that the sequence of questions on the answer sheet goes down the page and not across the page.

2) Block out 3-4 hours to read and answer the exam questions.

3) Mark ONLY ONE ANSWER.

4) Erase changes completely.

IV. AFTER COMPLETING THE EXAM

1) **IMPORTANT!!!! Make a copy of your completed answer sheet.**

2) Mail your answer sheet in the envelope provided with the protective cardboard. **Do not fold the answer portion of the sheet.**

3) Allow 6-8 weeks for return of your personalized Participant Profile and Certificate of Completion of CME credit.

4) Begin studying Part II of the SASP (back section of SASP booklet).

All data concerning results of the study program are strictly confidential and elaborate security measures have been set-up in the Office of Education to ensure that only the individual participant has access to his/her scores. For additional information regarding this program, please contact: American Urological Association Education and Research, Inc. (All rights reserved.) Printed in USA 01/2010.

Common Urology Abbreviations

ACE	Angiotensin converting enzyme
ACTH	Adenocorticotrophic hormone
ADH	Antidiuretic hormone
AFP	Alpha-fetoprotein
AIDS	Acquired immune deficiency syndrome
Beta-hCG	Beta human chorionic gonadotropin
BCG	Bacillus Calmette-Guerin
BPH	Benign prostatic hyperplasia
CIC	Clean intermittent catheterization
CAH	Congenital adrenal hyperplasia
CIS	Carcinoma in situ
CMG	Cystometrogram
COPD	Chronic obstructive pulmonary disease
CT	Computed tomography
CVA	Cerebrovascular accident
DDAVP	Vasopressin synthetic analog
DES	Diethylstilbestrol
DMSA	Dimercaptosuccinic acid
DRE	Digital rectal exam
DTPA	Tc-99m Pentetate
DVT	Deep venous thrombosis
EHL	Electrohydraulic lithotripsy
EKG	Electrocardiogram
EMG	Electromyogram
ESRD	End-stage renal disease
5-FU	5-fluorouracil
FSH	Follicle stimulating hormone
GFR	Glomerular filtration rate
GnRH	Gonadotropin releasing hormone
HIV	Human immuno deficiency virus
^{125}I	Iodine^{125}
ICSI	Intracytoplasmic sperm injection
I.V.	Intravenous
IVC	Inferior vena cava
IVP	Intravenous pyelogram
IRB	Institutional Review Board
KUB	Kidney, ureter, bladder
LDH	Lactate dehydrogenase
LH	Luteinizing hormone
LH-RH	Luteinizing hormone releasing hormone
LPP	Leak point pressure
LUTS	Lower urinary tract symptoms
M-VAC	Methotrexate, vinblastine, Adriamycin (doxorubicin), cisplatin
MAG-3	Mercaptoacetylglycine
MIBG	Iodine-131-meta-iodobenzylguanidine
MRI	Magnetic resonance imaging
MVC	Motor vehicle collision
NS	Normal saline
NPO	Nothing by mouth
NSAIDS	Nonsteroidal anti-inflammatory drugs
NSGCT	Nonseminomatous germ cell tumor

OKT 3	Muromonab-CD3
PCNL	Percutaneous nephrolithotomy
PDE5	Phosphodiesterol inhibitor 5
PET	Positron emission tomography
PGE 1	Prostaglandin E-1
PIN	Prostatic intraepithelial neoplasia
PSA	Prostate specific antigen
PT	Prothrombin time
PTT	Partial thromboplastin time
PUV	Posterior urethral valve
PVR	Postvoid residual
QD, QHS	Dosing
XRT	Radiation therapy
RBC	Red blood cell count
RCC	Renal cell carcinoma
RL/NS/D5W	Ringer's lactate/Normal saline Dextrose 5% water
RPLND	Retroperitoneal lymph node dissection
RTA	Renal tubular acidosis
SIADH	Syndrome of inappropriate antidiuretic hormone
SSRI	Selective serotonin reuptake inhibitors
SWL	Shock wave lithotripsy
TCC	Transitional cell carcinoma
TPN	Total parenteral nutrition
TRUS	Transrectal ultrasonography
TUIP	Transurethral incision of prostate
TUMT	Transurethral microwave therapy
TUNA	Transurethral needle ablation
TUR	Transurethral resection
TURP	Transurethral resection of prostate
TURBT	Transurethral resection of bladder tumor
UPJ	Ureteropelvic junction
UTI	Urinary tract infection
VCUG	Voiding cystourethrogram
VDRL	Venereal disease research laboratory
VHL	Von Hippel - Lindau
VUR	Vesicoureteral reflux
WBC	White blood cell count
XRT	Radiation therapy

Normal Laboratory Values

General Chemistry

Electrolytes

Na	135 – 145 mEq/l
K	3.5 – 5.0 mEq/l
Cl	120 – 130 mEq/l
CO_2	22 – 26 mEq/l
Ca	8.5 – 10.5 mg/dl
PO_4	2.6 – 4.5 mg/dl

Blood Urea Nitrogen (BUN)	8 – 20 mg/dl
Creatinine	0.5 – 1.5 mg/dl
Creatinine Clearance	50 – 125 ml/min
Prostate Specific Antigen (PSA)	< 4 ng/ml
Acid Phosphatase	0 – 0.8 U/l
Alanine aminotransferase (SGPT)	10 – 55 U/l
Alkaline phosphatase	45 – 115 U/l
Alpha-feto protein (AFP)	0 – 10 IU/ml
Beta–hCG	0 – 10 mIu/ml
Amylase	50 – 120 U/l
Bilirubin	0 – 0.4 mg/dl
Lactate dehydrogenase (LDH)	110 – 210 U/l
Uric acid	3.6 – 8.5 mg/dl
Hemoglobin	13 – 18 g/dl
White Blood Count (WBC)	5 – 10,000/cu mm
Platelets	150 – 350,000/cu mm

Endocrine

Aldosterone	4 – 31 ng/dl
Calcitonin	0 – 28 pg/ml
Catecholamines	< 1000 ng/l
Cortisol	0 – 10 μg/dl
Epinephrine	0 – 110 pg/ml
17-Hydroxysteroids	3 – 10 mg/day
17-Ketosteroids	2 – 7 mg/day
Metanephrines	0 – 0.9 mg/day
Parathyroid Hormone (PTH)	10 – 60 pg/ml
Plasma Renin Activity (PRA)	0.5 – 1.6 ng/ml/hr
Testosterone	300 – 1000 ng/dl
Vanillylmandellic acid (VMA)	1.4 – 6.5 mg/day
Follicle Stimulating Hormone (FSH)	1 – 15 mIU/ml
Luteinizing Hormone (LH)	3 – 18 mIU/ml

Arterial Blood Gases

PO_2	75 – 100 mm Hg
PCO_2	35 – 45 mm Hg

1. During bladder filling, intraluminal ureteral pressure:

A. increases, and the frequency of contractions increase.
B. increases, and the frequency of contractions decrease.
C. increases, and the frequency of contractions is unchanged.
D. decreases once the frequency of contractions decrease.
E. remains stable while ureteral contractions decrease.

2. A 54-year-old man who underwent a successful open pyeloplasty 20 years ago develops recurrent flank pain. Diuretic renography reveals recurrent UPJ obstruction with 30% ipsilateral renal function. Retrograde pyelogram reveals a 1 cm UPJ stricture. The next step is:

A. balloon dilation.
B. endopyelotomy.
C. re-do pyeloplasty.
D. ureterocalycostomy.
E. nephrectomy.

3. A 65-year-old man with clinical T2 bladder cancer desires bladder preservation. After a complete transurethral resection, he undergoes induction radiation and chemotherapy with 5-FU and cisplatin. Three months later, he has another T2 tumor that is completely resected. The next step is:

A. additional radiation.
B. taxane-based chemotherapy.
C. taxane-based chemotherapy and radiation.
D. cisplatin-based chemotherapy and radiation.
E. radical cystectomy.

4. A 47-year-old man with diabetes mellitus has erectile dysfunction, decreased vibratory sensation in his feet and fasting blood sugars over 300 mg/dl. The best treatment of his erectile dysfunction is:

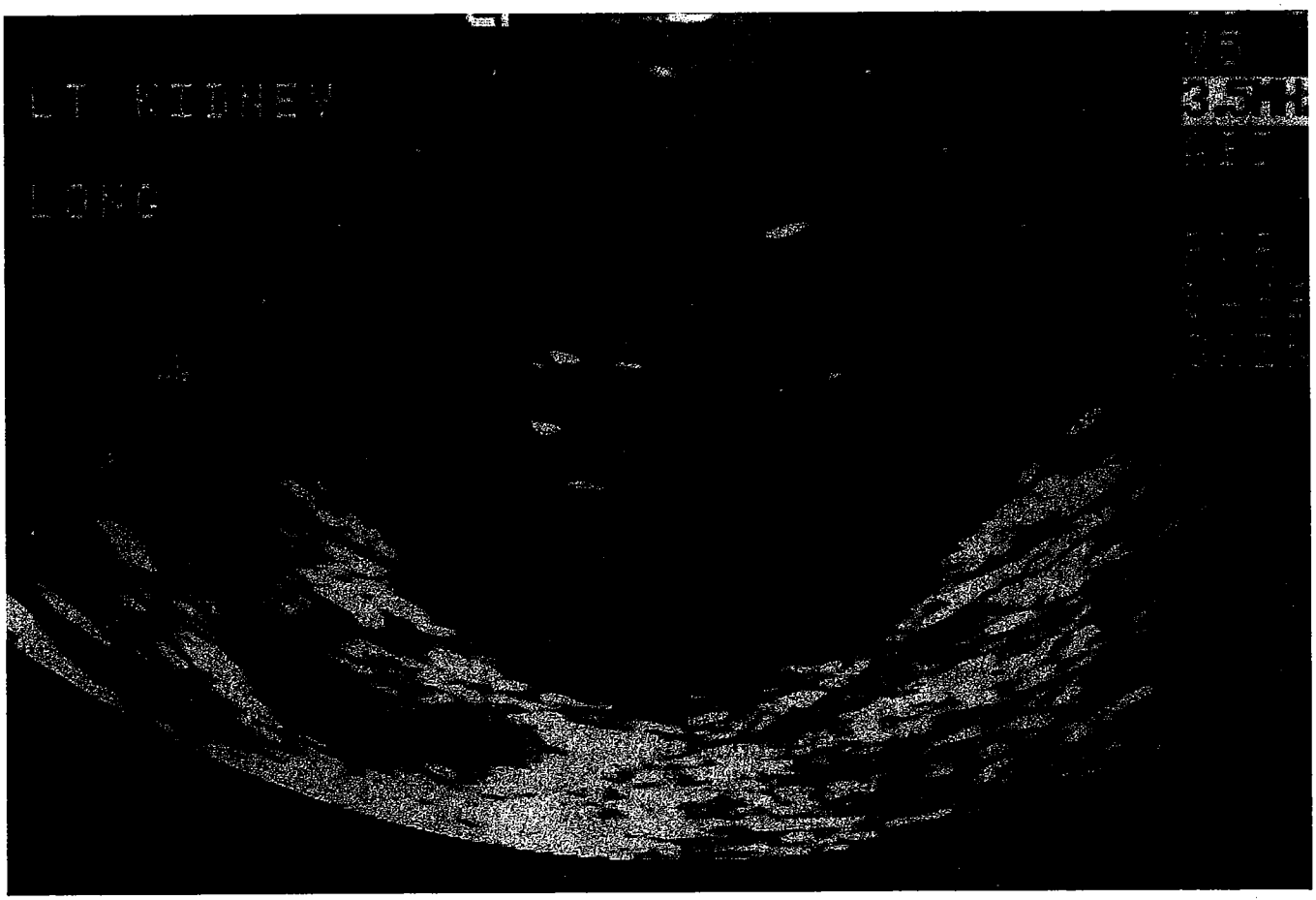
A. exogenous testosterone.
B. exogenous gonadotropins.
C. improved diabetic control.
D. a daily Vitamin B complex.
E. penile prosthesis.

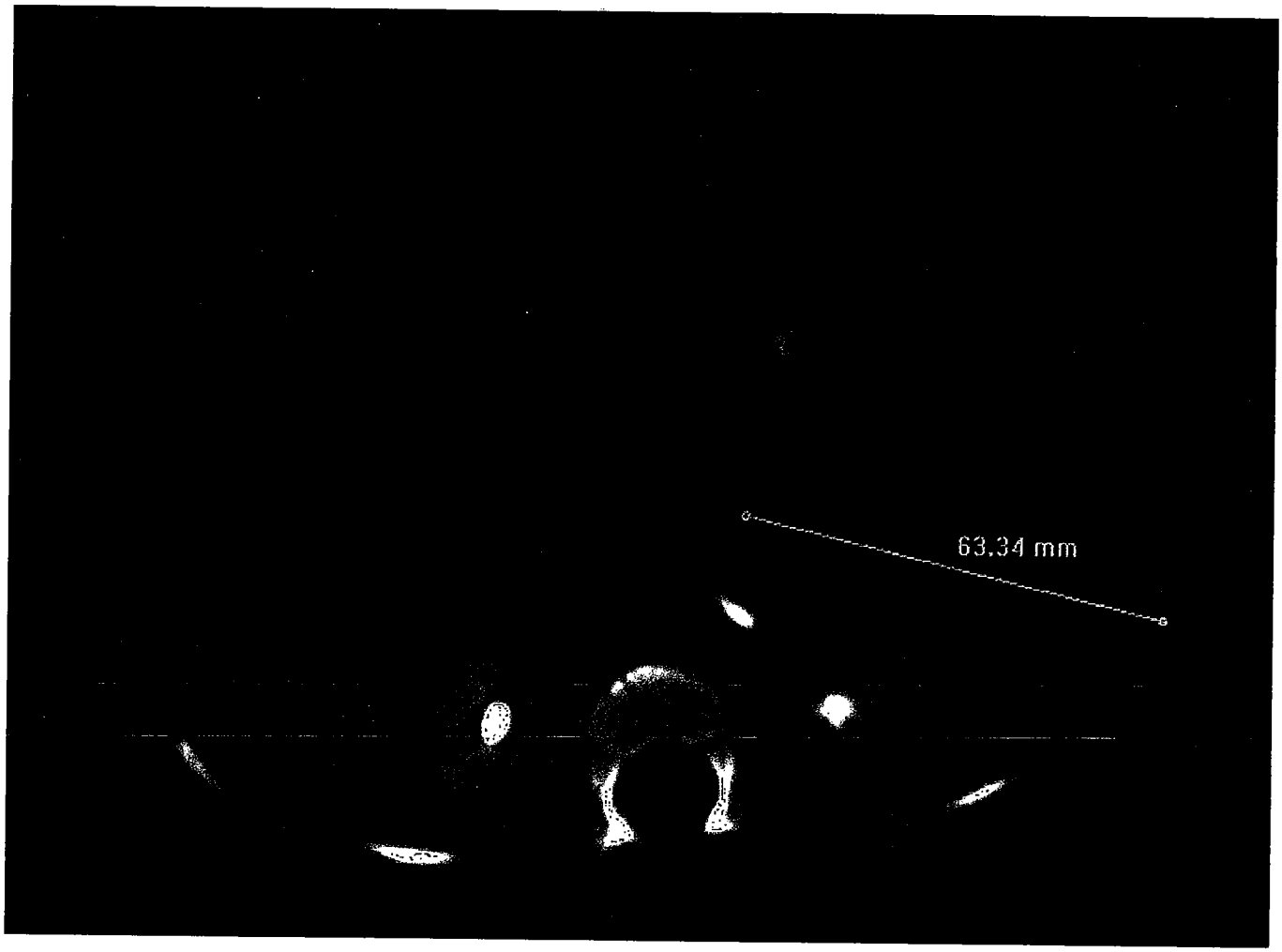
5. A 48-year-old man and his 44-year-old wife wish to have another child. Fifteen years previously, he had a vasectomy and four years ago he failed vasectomy reversal. No sperm were found in the vas at the time of surgery. The wife's menses are regular. The best chance for pregnancy is:

A. open epididymal aspiration with IVF and ICSI.
B. needle aspiration of the testicle with IVF and ICSI.
C. gynecologic evaluation of wife then bilateral vasoepididymostomy if her evaluation is normal.
D. donor eggs and needle aspiration of the testicle with IVF and ICSI.
E. re-do microscopic two-layer vasovasostomy.

6. A three-year-old girl has a febrile UTI. Ultrasound and CT scan are shown. The next step is:

A. DMSA scan.
B. nephrectomy.
C. antibiotics and repeat ultrasound in three months.
D. percutaneous aspiration.
E. renal ultrasound of parents.

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7. The renal artery occlusive disease most likely to be associated with stable renal function is:

A. intimal fibroplasia.
B. medial hyperplasia.
C. medial fibroplasia.
D. perimedial fibroplasia.
E. atherosclerotic disease.

8. A 45-year-old woman has a sudden onset of severe right flank pain. CT scan shows a right perirenal hematoma. The most likely underlying cause is:

A. renal adenocarcinoma.
B. renal angiomyolipoma.
C. renal artery aneurysm.
D. polyarteritis nodosa.
E. complex renal cyst.

9. A 45-year-old obese man has hypertension, new onset diabetes and general weakness. Two 24-hour urine collections show elevated cortisol levels. The next step is:

A. low-dose dexamethasone test.
B. late afternoon plasma corticotrophin and cortisol measurement.
C. high-dose dexamethasone test.
D. metyrapone test.
E. abdominal CT scan.

10. In a paraplegic man with a T12 spinal cord transection, the major complication of external urethral sphincterotomy is:

A. significant hemorrhage.
B. acute urinary tract sepsis.
C. priapism.
D. impotence.
E. autonomic dysreflexia.

11. A 60-year-old woman complains of peristomal pain three days after undergoing a radical cystectomy and ileal conduit for bladder cancer. A 16 Fr straight catheter is in the conduit; ureteral stents were not utilized. Her stoma was initially dusky, and is now black. The next step is:

A. remove conduit catheter.
B. loopogram.
C. bilateral percutaneous nephrostomies.
D. loop endoscopy.
E. observation.

12. Temsirolimus treatment in poor risk patients with metastatic RCC is most effective when given:

A. oral daily.
B. subcutaneously weekly.
C. I.V. weekly.
D. subcutaneously three times per week.
E. I.V. weekly in combination with subcutaneous interferon.

13. A woman with urinary incontinence occurring only during orgasm is best managed by:

A. behavioral therapy.
B. a bladder neck sling.
C. alpha-agonist medication.
D. antimuscarinic medication.
E. bladder neck collagen injection.

14. A 60 kg, 40-year-old woman with recurrent calcium oxalate nephrolithiasis has normal serum calcium and phosphorus levels. Twenty-four hour urine parameters are: Calcium 350 mg, Creatinine 2200 mg, Oxalate 50 mg, Citrate 1000 mg, Uric Acid 800 mg. The next step is:

A. hydrochlorothiazide therapy.
B. allopurinol therapy.
C. pyridoxine therapy.
D. creatinine clearance.
E. repeat 24-hour urine collection.

15. A 62-year-old man with metastatic prostate cancer is treated with leuprolide acetate 30 mg intramuscular every four months and bicalutamide 50 mg daily. Eight months after an initial complete response, his PSA rises to 14 ng/ml and several new bone lesions are seen on bone scan. The next step is:

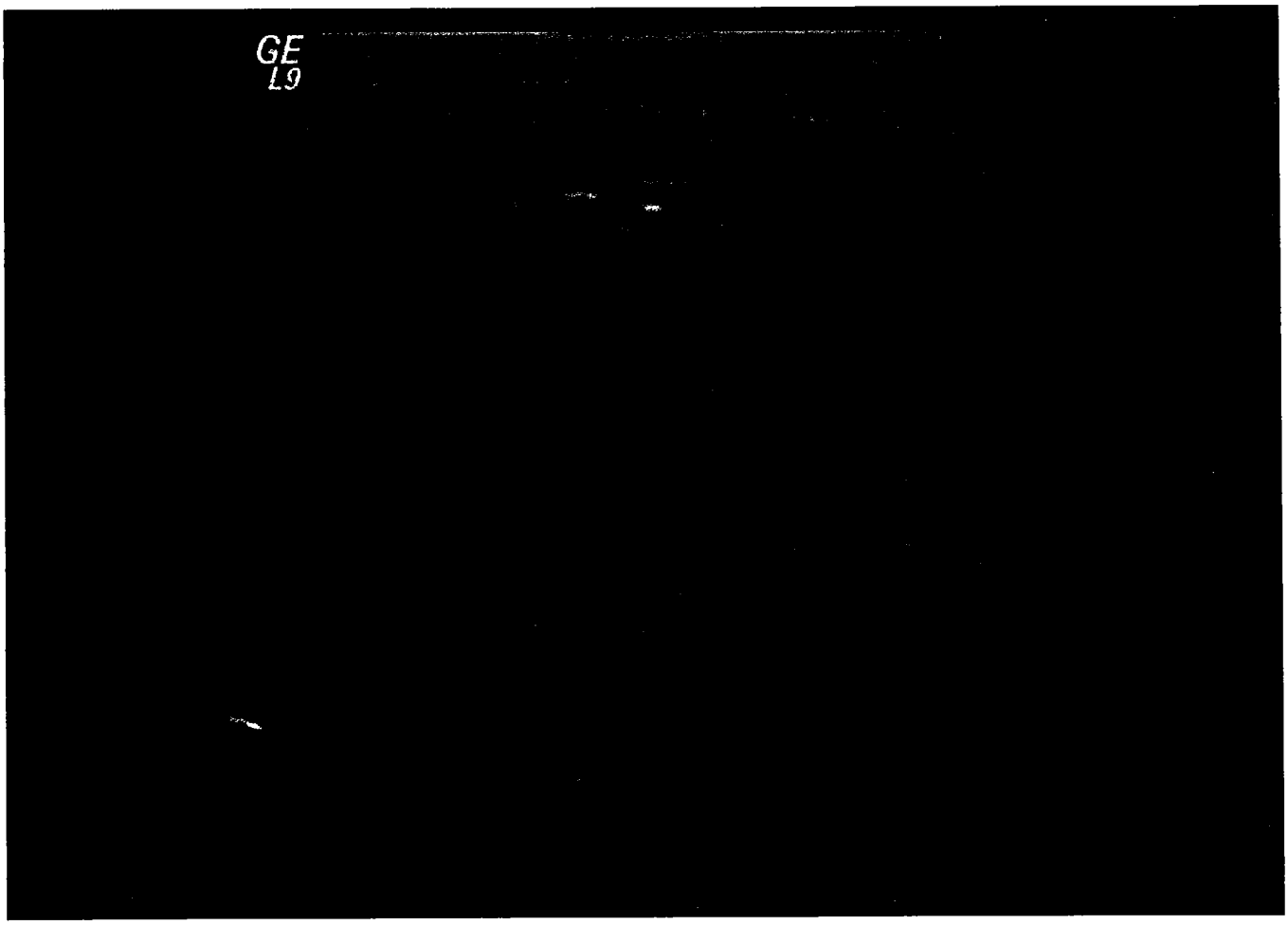
A. serum testosterone level.
B. perform orchiectomy.
C. increase bicalutamide to 150 mg daily.
D. stop bicalutamide.
E. docetaxel and prednisone.

16. A 65-year-old man with insulin-dependent diabetes chooses a vacuum constriction device for treatment of erectile dysfunction. After attempted use he reports insufficient rigidity for penetration. The most likely explanation is:

A. inadequate cavernosal arterial flow.
B. fibrosis of the corpora spongiosum.
C. corporal muscle dysfunction.
D. diabetic neuropathy.
E. improper device use.

17. A one-month-old boy has a history of unilateral prenatal hydroureteronephrosis. An ultrasound of the right kidney is shown. The most likely explanation for the finding is:

A. VUR into the upper pole.
B. upper pole UPJ obstruction.
C. ectopic upper pole ureter.
D. renal cyst.
E. calyceal diverticulum.



18. A 42-year-old man has gross hematuria. Evaluation reveals a 9 cm left renal mass and diffuse metastases in lung and bone. Cystoscopy is normal. Cytoreductive nephrectomy prior to systemic tyrosine kinase inhibitor therapy will:

A. improve response to therapy.
B. reduce pro-angiogenic factors.
C. resolve hematuria.
D. improve drug delivery to metastatic sites.
E. increase survival.

19. The condition that leads to a decrease in circulating blood volume is:

A. reduced renal arterial pressure.
B. angiotensin II excess.
C. catecholamine excess.
D. hepatic venous congestion.
E. hyperaldosteronism.

20. A 53-year-old man with a PSA of 2.7 ng/ml undergoes 12-core TRUS prostate needle biopsy. Pathology reveals focal high-grade PIN and atypical adenomatous hyperplasia (adenosis). The next step is:

A. examine multiple deeper tissue sections of current biopsy.
B. immediate repeat 12-core TRUS biopsy.
C. immediate saturation biopsy.
D. repeat PSA in six months.
E. delayed TRUS biopsy in six months.

21. The most likely side effect of thiazide diuretic therapy for renal hypercalciuria is:

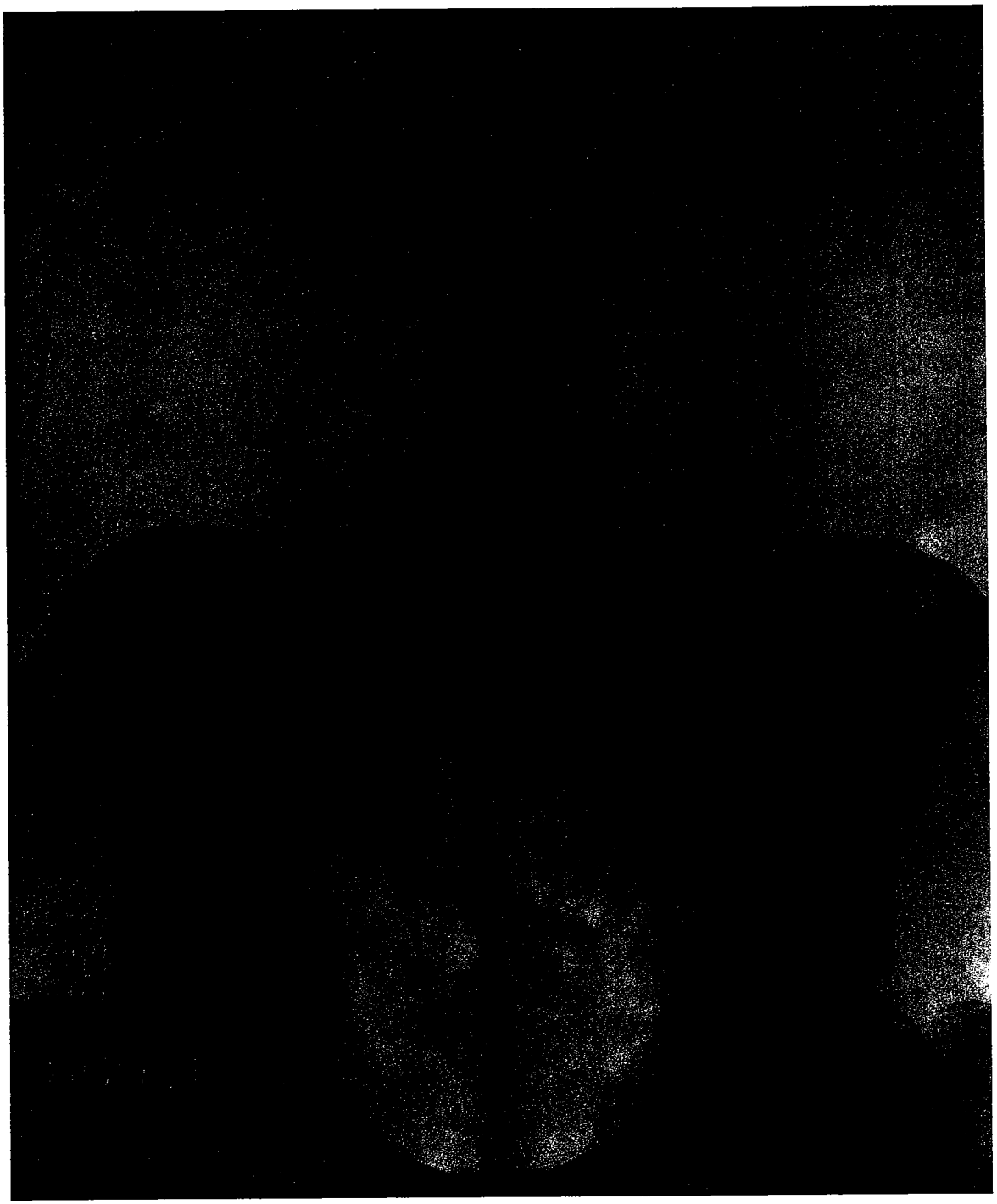
A. hypotension.
B. hyperkalemia.
C. hypocitraturia.
D. skin rash.
E. hyperoxaluria.

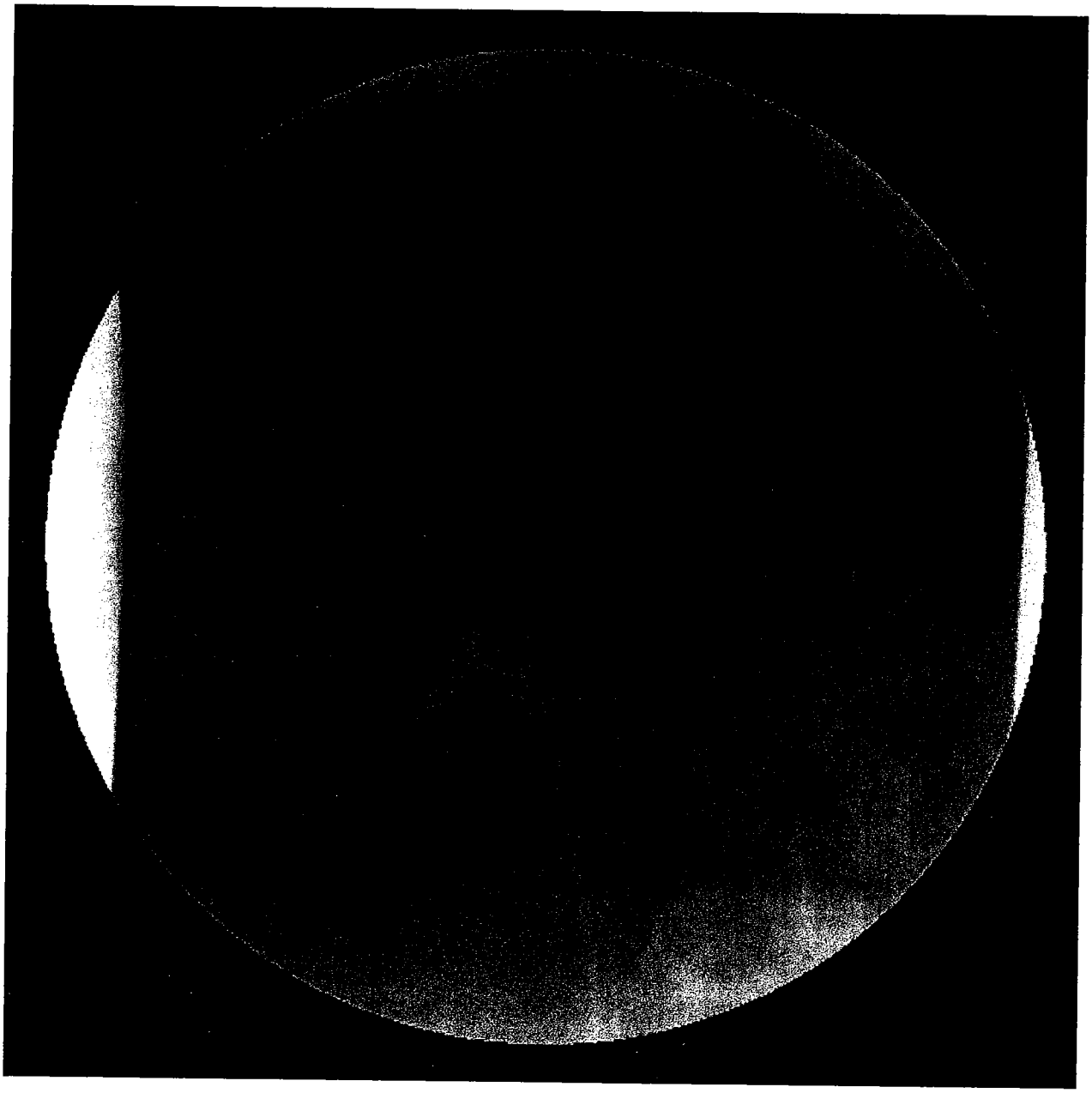
22. The validity of a creatinine clearance test can best be determined by simultaneously measuring or calculating the:

A. total creatinine excreted.
B. total sodium excreted.
C. total urea excreted.
D. total urine volume excreted.
E. average urine osmolality.

23. A 67-year-old man has persistent urinary drainage from a flank drain ten days following laparoscopic partial nephrectomy for a 3 cm upper pole mass. A retrograde ureteral stent was placed at the time of surgery. A KUB and renal image during cystography are shown. The next step is:

A. observation.
B. percutaneous nephrostomy.
C. advance drain.
D. reposition stent.
E. open surgical repair.





24. A 46-year-old man with a congenital solitary kidney has a partial nephrectomy for a 3 cm RCC. At his first follow-up visit he is doing well. Physical exam is normal and routine laboratory studies are normal except for a stable but slightly elevated creatinine of 1.7 mg/dl, and a urinalysis with 2+ proteinuria. The next step is:

A. cholesterol and lipid panel.
B. 24-hour urinary protein measurement.
C. CT scan of the abdomen.
D. MRI scan of the abdomen.
E. nuclear medicine renography.

25. Pretransplant bilateral nephrectomy is necessary for:

A. glomerulonephritis.
B. polycystic kidney disease.
C. medullary sponge kidney.
D. diabetes.
E. recurrent pyelonephritis.

26. A 38-year-old azoospermic man with secondary infertility has an ejaculate volume of 0.3 ml. Post ejaculate urine contains no sperm. Serum testosterone and FSH are normal, both vasa are palpable, and testicular volume is normal. Transrectal ultrasonography reveals a normal prostate, ejaculatory ducts, and dilated seminal vesicles. The next step is:

A. ejaculatory duct cannulation.
B. testis biopsy.
C. vasography.
D. seminal vesicle aspiration.
E. renal ultrasound.

27. A 69-year-old man undergoes complete resection of a micropapillary TCC of the bladder with superficial invasion of the lamina propria (T1). Muscularis propria is present and uninvolved; upper tract imaging is normal. The next step is:

A. surveillance with cystoscopy and radiographic imaging.
B. induction and maintenance Mitomycin C.
C. induction and maintenance BCG.
D. radical cystectomy.
E. neoadjuvant chemotherapy and radical cystectomy.

28. A 40-year-old woman complains of headaches, photophobia, and urinary incontinence. Physical examination reveals lax anal tone and sacral anesthesia. Urinalysis shows greater than 10 RBC/hpf. Urodynamics demonstrates detrusor overactivity. An MRI scan reveals several lesions consistent with hemangiomas within the spinal cord. The most likely diagnosis is:

A. lipomeningocele.
B. tuberous sclerosis.
C. VHL disease.
D. diabetes mellitus.
E. adult polycystic kidney disease.

29. A 20-year-old man has recurrent gross hematuria and left flank pain related to exercise. Urinalysis reveals microhematuria, RBC casts and 2+ proteinuria. Renal ultrasound is normal. The study most likely to be diagnostic is:

A. CT urogram.
B. diuretic renography.
C. renal angiography.
D. ureteroscopy.
E. renal biopsy.

30. A 58-year-old year old asymptomatic man has a PSA of 2.4 ng/ml and a normal DRE. He is currently taking finasteride 1 mg every day to prevent hair loss. The next step is:

A. repeat PSA in one year.
B. repeat PSA in six months.
C. obtain free/total PSA ratio.
D. stop finasteride and repeat PSA in four months.
E. 12-core transrectal prostate needle biopsy.

31. A 43-year-old woman has a 3 cm vesicovaginal fistula on the posterior bladder wall 2 cm above the trigone three years following pelvic XRT for cervical cancer. CT urogram demonstrates normal upper urinary tracts without evidence of recurrent disease. The next step is:

A. bladder biopsy.
B. bilateral percutaneous nephrostomies.
C. immediate transvaginal repair with gracilis interposition.
D. immediate transabdominal repair with omental interposition.
E. delayed transabdominal repair with omental interposition.

32. A 26-year-old woman who is 12 weeks pregnant has a sudden onset of frequency, urgency, and dysuria. She is severely allergic to penicillin. The best antibiotic is:

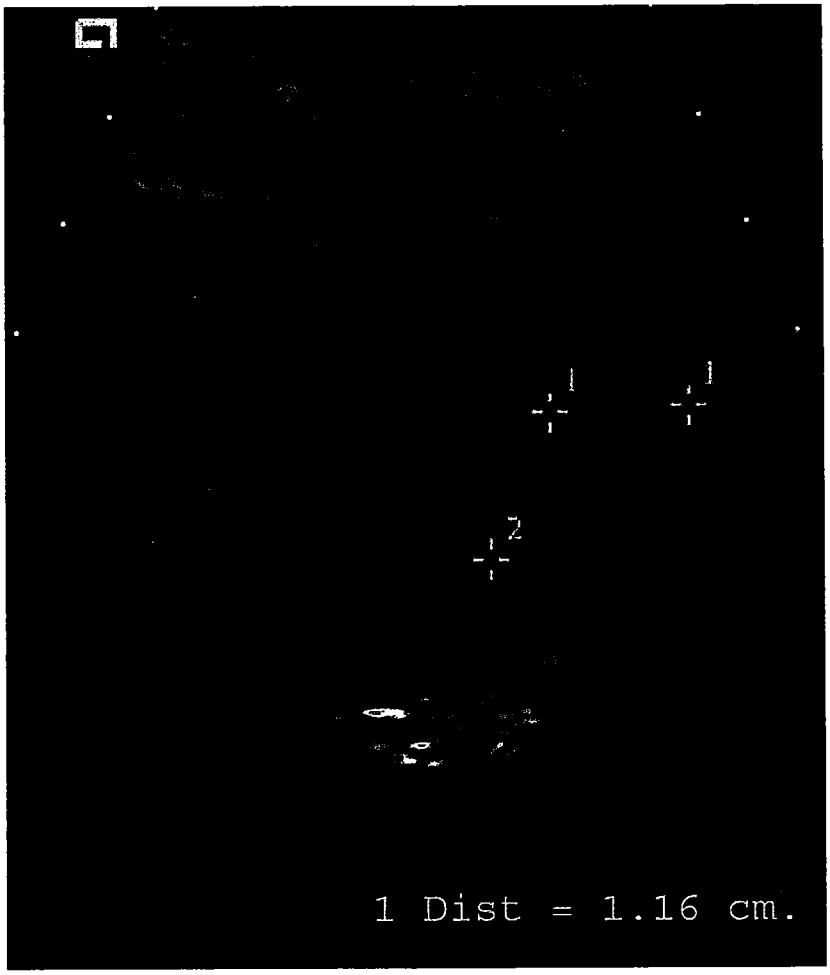
A. cephalexin.
B. tetracycline.
C. trimethoprim/sulfamethoxazole.
D. ciprofloxacin.
E. nitrofurantoin.

33. A 61-year-old man had a radical prostatectomy for pT2N0 Gleason 6 disease with negative margins five years ago. His initial PSA was undetectable and remained so until three years after surgery when it was first noted to be 0.08 ng/ml. One year later, his PSA was 0.1 ng/ml and it is now 0.12 ng/ml. The next step is:

A. repeat PSA in three to six months.
B. biopsy of the prostatic bed.
C. bone scan.
D. salvage pelvic radiation.
E. LH-RH agonist therapy.

34. A nine-year-old boy has urinary frequency and diurnal urinary incontinence without a history of urinary infection. Renal ultrasound is normal. An ultrasound of the bladder is shown. The next step is:

A. observation.
B. behavioral modification.
C. VCUG.
D. oxybutynin.
E. cystoscopy.



35. A 46-year-old woman with autosomal dominant polycystic kidney disease has mild flank pain, dysuria, urinary frequency, hematuria, and pyuria. Her temperature is 38.1° C. The serum creatinine is 1.8 mg/dl. An ultrasound shows a 4 cm cyst in the left kidney filled with echogenic shadows. Urine culture is negative. The next step is:

A. cyst aspiration.
B. open renal cystectomy.
C. ciprofloxacin.
D. ampicillin and gentamicin.
E. laparoscopic cyst marsupialization.

36. A 60-year-old man has Gleason 7, pT3aN0M0 adenocarcinoma of the prostate with a positive surgical margin after radical prostatectomy. His PSA is 0.2 ng/ml 16 weeks after surgery. He has mild but persistent stress urinary incontinence. The next step is:

A. observation.
B. high-dose bicalutamide.
C. leuprolide acetate.
D. postoperative radiation.
E. radiation if PSA values reach >1 ng/ml.

37. In hypogonadal men, the agent which improves the results of nocturnal penile tumescence testing but does not affect erection in response to erotic films is:

A. testosterone.
B. L-Dopa.
C. sildenafil.
D. yohimbine.
E. bromocriptine.

38. A 42-year-old man is undergoing laparotomy for intraabdominal injuries and bladder rupture. Bleeding is noted in the perivesical area. After repair of the bladder rupture, attempts at suture ligation do not stop the persistent bleeding. Multiple blood transfusions are given and his core temperature is 35.5° C. The next step is:

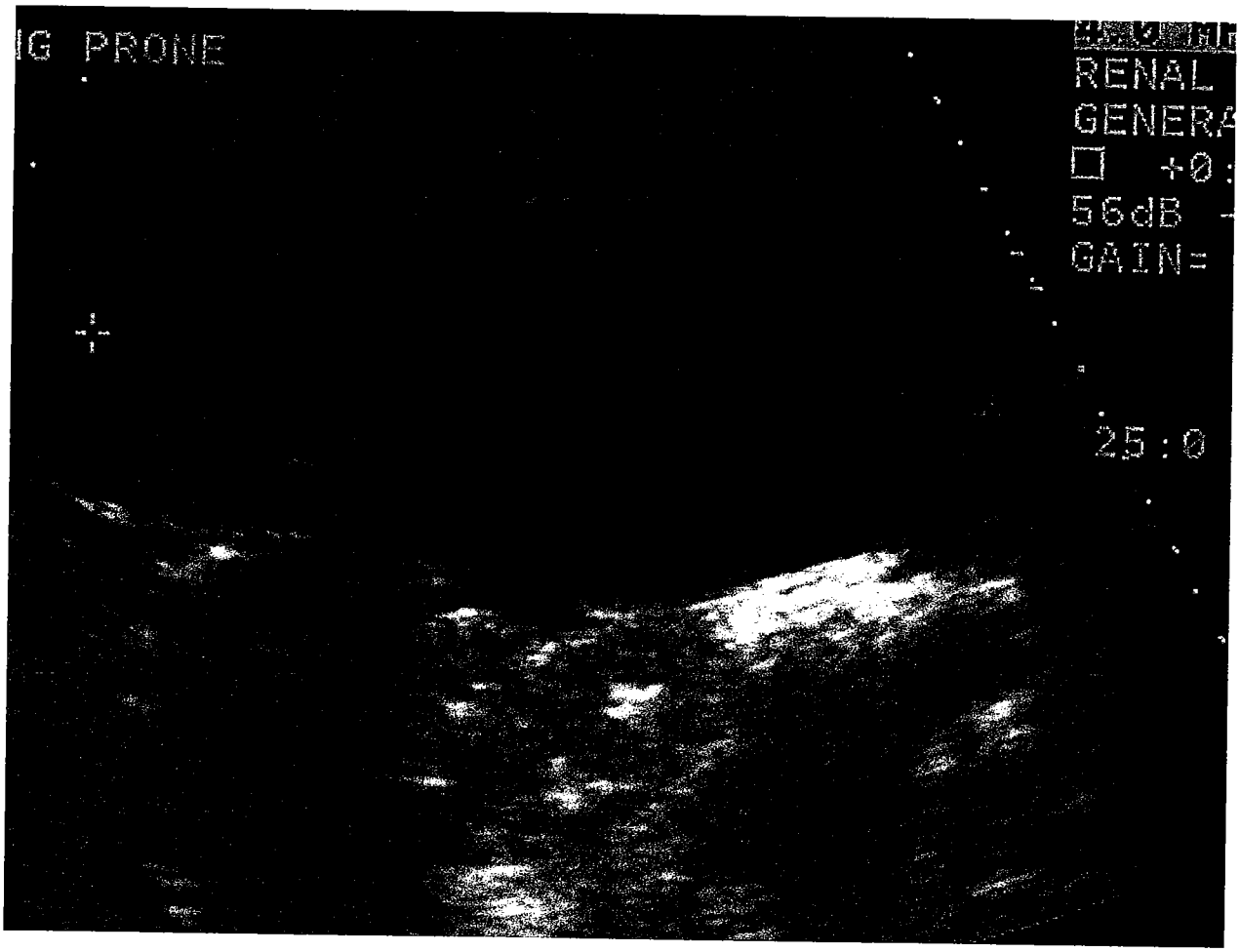
A. intraoperative arteriography.
B. ligation of the hypogastric arteries.
C. I.V. aminocaproic acid.
D. close the abdomen and place patient in anti-shock trousers (MAST).
E. pack the pelvis and close the abdomen.

39. A 53-year-old man with a 2 cm distal penile cancer undergoes partial penectomy revealing low grade T1 squamous cell carcinoma with tumor seen 7 mm from the final surgical margin. The next step is:

A. surveillance.
B. 5-fluorouracil cream.
C. XRT to the penile stump.
D. Moh's surgery of the penile stump.
E. additional penile resection to achieve a 2 cm margin.

40. A four-year-old girl undergoes a left cross trigonal ureteroneocystostomy with ureteral tapering for grade 5 VUR. The preoperative VCUG and a left renal ultrasound six weeks following surgery are shown. The next steps are to continue prophylactic antibiotics and:

A. repeat ultrasound in four weeks.
B. MAG-3 renal scan.
C. percutaneous nephrostomy.
D. ureteral stent placement.
E. revise ureteroneocystostomy.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41. Cystine stones form primarily as a consequence of:

A. increased concentration of urinary cystine.
B. a deficiency of substances other than cystine that inhibit crystal growth.
C. an excess of substances that promote crystal growth.
D. increased binding of cystine by matrix (mucoproteins).
E. excessive urinary acidity.

42. A 12-year-old boy with a history of CAH has painful bilateral testicular masses confirmed on ultrasound. The next step is:

A. antibiotics.
B. increase corticosteroids.
C. fine needle aspiration of testis.
D. bilateral partial orchiectomy.
E. abdominal pelvic CT scan.

43. A 70-year-old man with metastatic colon cancer and indwelling ureteral stents develops profuse gross hematuria. Arteriography demonstrates a fistula between the right common iliac artery and ureter. He is hemodynamically stable. The next step is:

A. stent removal.
B. percutaneous nephrostomy.
C. embolize common iliac artery.
D. open surgical repair with ligation of the common iliac artery.
E. endovascular graft placement.

44. The optimal tissue for early coverage of the perineum following an avulsion skin injury is a(n):

A. island skin flap.
B. musculocutaneous flap.
C. full thickness skin graft.
D. split thickness skin graft.
E. dermal graft.

45. An obese 11-year-old girl with spina bifida is undergoing bladder reconstruction. The appendix is not suitable for construction of a catheterizable abdominal channel. The best channel option is:

A. tunneled reconfigured ileum (Monti).
B. tunneled tapered ileum.
C. intussuscepted ileum.
D. incontinent ileovesicostomy.
E. tubularized detrusor flap.

46. The most common acid-base disturbance that occurs in a patient with an ileal conduit urinary diversion is:

A. hyperkalemic, hyperchloremic, metabolic acidosis.
B. hyponatremic, hypochloremic, metabolic acidosis.
C. hypochloremic, hypokalemic, metabolic alkalosis.
D. hypokalemic, hyperchloremic, metabolic acidosis.
E. hyponatremic, hypochloremic, metabolic alkalosis.

47. The physiologic change during the third trimester of pregnancy that offers protection against kidney stone formation is:

A. increased ureteral peristalsis.
B. increased ureteral dilation.
C. increased urinary citrate.
D. decreased urinary calcium.
E. decreased urinary uric acid.

48. A five-year-old boy has an ectopic ureter associated with a nonfunctional, hydronephrotic, upper pole segment of a duplex system. He undergoes an upper pole partial nephrectomy. The key step in the surgical dissection is:

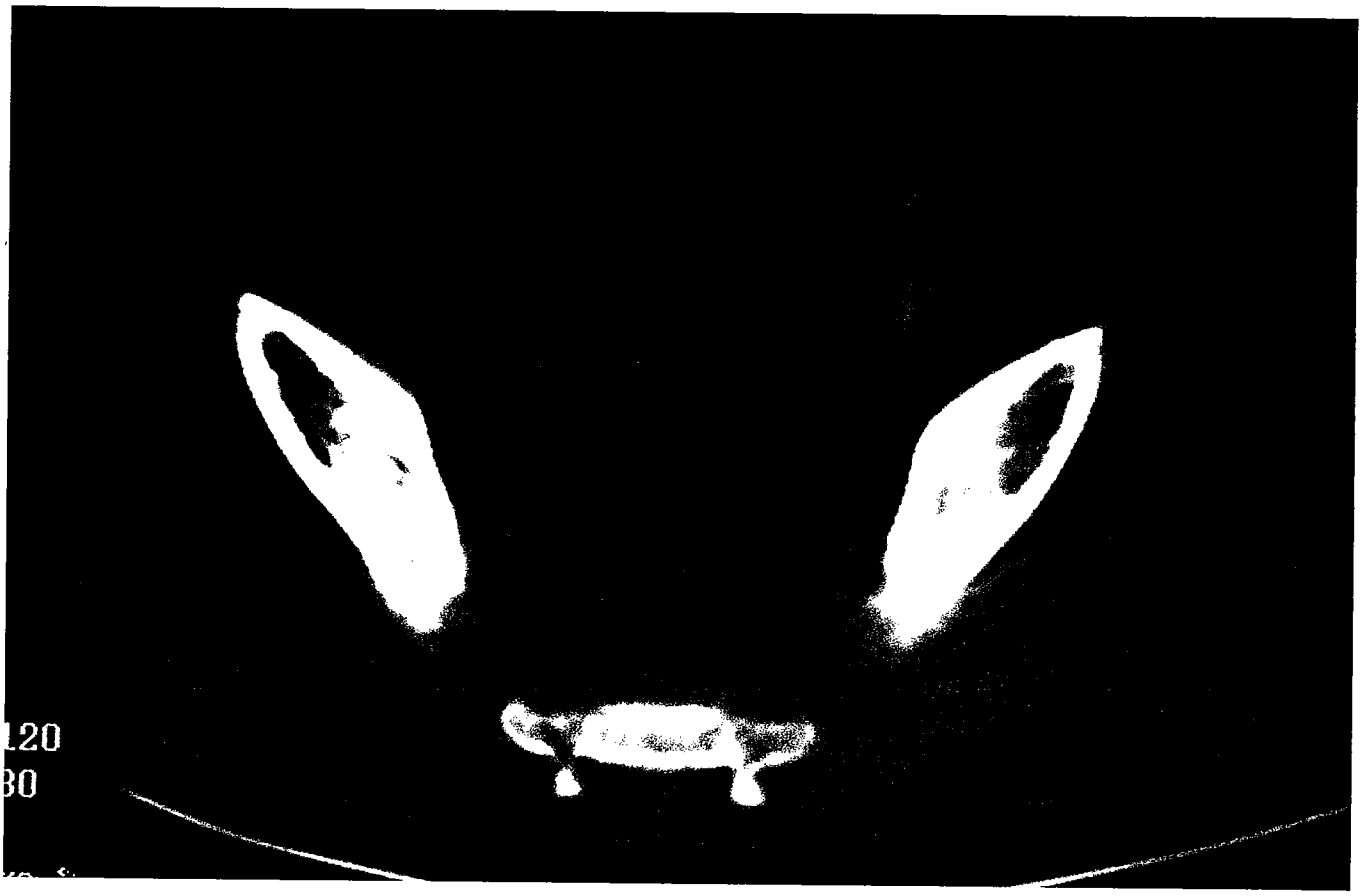
A. mobilization of the lower pole of the kidney.
B. mobilization of the adrenal gland.
C. reduction of the size of the renal pelvis.
D. complete removal of the distal ureter.
E. dissection of the ureter from the renal hilum.

49. A 65-year-old man cannot void following an abdominoperineal resection for rectal cancer. He is treated with CIC, and is continent between catheterizations. Three months later he still cannot void and is re-evaluated. He has a normal creatinine and PSA. Cystoscopy reveals occlusive lateral prostatic lobes and a median lobe which projects onto the trigone. A combined CMG-EMG demonstrates a slight decrease in compliance, no definite detrusor contraction is seen. His EMG never silences. Preferred management is:

A. continue CIC.
B. bethanechol.
C. tamsulosin.
D. TUIP.
E. TURP.

50. A six-year-old boy has severe suprapubic pain with urgency, frequency, dysuria, and fever. Urinalysis and culture are negative after a course of oral antibiotics. WBC count is 12,000/mcl. Renal ultrasound and VCUG are normal. Pelvic CT images are shown. The next step is:

A. I.V. antibiotics and observation.
B. percutaneous drainage and culture.
C. cystoscopy.
D. percutaneous biopsy.
E. partial cystectomy.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51. An eight-year-old 30 kg boy with spina bifida has an appendicocecostomy for the antegrade continence enema (ACE) procedure. Postoperatively, he has persistent fecal incontinence and severe constipation with little to no fecal response within two hours of placing 3000 cc of water into the ACE stoma. The next step is:

A. add 1/4 cup of baby shampoo to the colonic irrigations.
B. add a bottle of magnesium citrate to the bowel irrigations.
C. change to polyethylene glycol colonic irrigations.
D. convert to a descending colon stoma or tube for the ACE.
E. diverting colostomy.

52. The most life-threatening electrolyte abnormality that develops during the diuretic phase of acute tubular necrosis is:

A. hyponatremia.
B. hypomagnesemia.
C. hypocalcemia.
D. hypokalemia.
E. hyperkalemia.

53. The stone composition most resistant to fragmentation with SWL therapy is:

A. calcium oxalate monohydrate.
B. calcium oxalate dihydrate.
C. hydroxyapatite.
D. uric acid.
E. struvite.

54. A 27-year-old man evaluated for infertility of nine months duration has a normal sperm count and motility, but sperm morphology reveals only round headed sperm. Testis volume is normal bilaterally, serum FSH is within normal limits, and he has a moderate sized left unilateral varicocele. His wife is 25-years-old, and has a normal evaluation. The next step is:

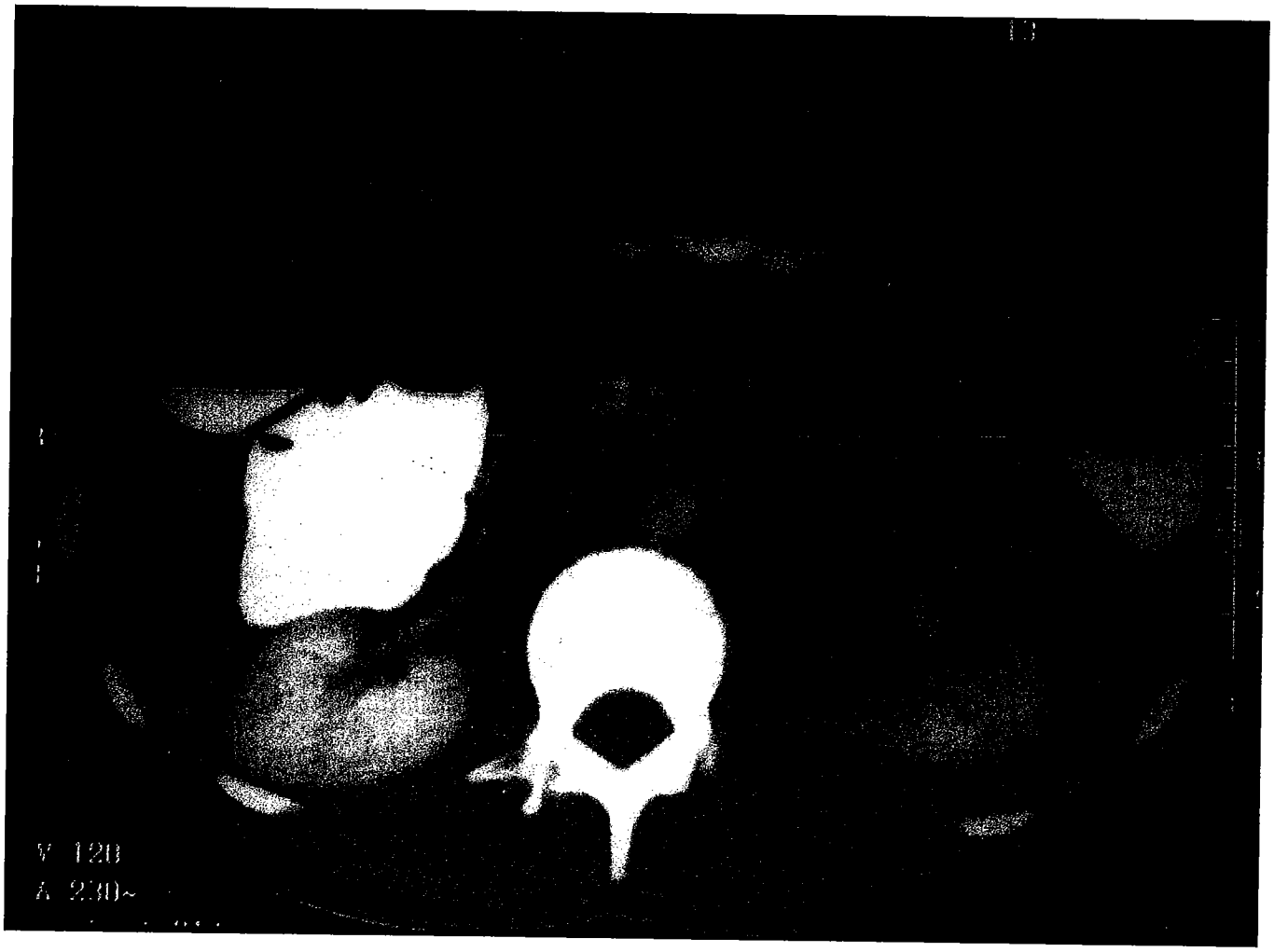
A. varicocele repair.
B. intrauterine insemination.
C. re-evaluation in three months.
D. in vitro fertilization.
E. ICSI.

55. A 50-year-old man is scheduled for a living related renal transplant. He has a serum creatinine of 5.5 mg/dl and is not yet on dialysis. His noncontrast CT scan shows a 2 cm solid left renal mass. The next step is:

A. repeat CT scan with I.V. contrast.
B. radical nephrectomy and exclude patient from transplantation.
C. simultaneous radical nephrectomy and renal transplantation.
D. radical nephrectomy, transplant in two years if no recurrence.
E. partial nephrectomy, transplant in two years if no recurrence.

56. A 12-year-old boy with blunt abdominal trauma has a CT scan that shows a left renal fracture with a small subcapsular hematoma. He is managed with observation. Six days after injury he has a temperature of 38.4° C and increased hematuria with clots. His hematocrit has decreased from 30 to 24 in the last day. The CT scan on day six is shown. The next step is:

A. observation.
B. retrograde ureterogram.
C. arteriogram.
D. percutaneous nephrostomy.
E. open surgical exploration.



57. An eight-year-old boy with acute lymphocytic leukemia undergoes chemotherapy. His urine output during the last 24 hours is 50 ml. Serum creatinine is 2.1 mg/dl, BUN 40 mg/dl, and uric acid 8.5 mg/dl. Renal ultrasound demonstrates normal sized kidneys with no hydronephrosis and increased echogenicity. The next step is:

A. isotope renogram.
B. renal biopsy.
C. retrograde pyelography.
D. allopurinol.
E. hydration and urinary alkalinization.

58. A 28-year-old woman underwent kidney transplantation two weeks ago. Her immunosuppression regimen consists of tacrolimus, prednisone, and mycophenolate mofetil. She exhibits tremors but no fevers. Physical exam reveals no significant tenderness over the transplant. Serum creatinine nadir was 1.1 mg/dl but is now 1.9 mg/dl. Urinalysis is negative, and ultrasonography shows no hydronephrosis or peritransplant collections. The next step is:

A. blood sugar level.
B. tacrolimus blood level.
C. urine culture.
D. CT scan of transplant kidney.
E. I.V. fluid bolus.

59. A 55-year-old man has lower extremity thrombophlebitis and is started on warfarin. Two weeks later, he experiences abdominal pain and has a blood pressure of 84/50 mmHg. His hemoglobin is 13.5 gm/dl and serum potassium 5.8 mEq/l. A CT scan demonstrates bilateral 4 cm adrenal masses. The next step is I.V. fluids and administration of:

A. dexamethasone.
B. fresh frozen plasma.
C. Kayexalate.
D. fluorohydrocortisone.
E. Vitamin K.

60. Human papilloma virus is best prevented in a 15-year-old man with use of:

A. quadrivalent recombinant vaccine.
B. condoms.
C. oral acyclovir.
D. post-coital acetic acid.
E. topical acyclovir.

61. An 80-year-old man has urinary retention. He has bilateral pitting edema, an elevated jugular venous pulse, and a blood pressure of 200/120 mm Hg. His creatinine is 4.0 mg/dl. The serum K^+ and Na^+ are normal. An ultrasound shows a very distended bladder and bilateral pelvicaliectasis. Three liters of urine is obtained from his bladder when he is catheterized. Urine output over the next two hours is 700 ml. The next step is:

A. serial creatinine measurement.
B. replace output ml per ml with D5 1/2 NS.
C. monitor fluid intake and output every four hours.
D. monitor postural BP for two hours.
E. spot check urine for osmolality, sodium, and potassium.

62. Hypertension secondary to acute unilateral urinary obstruction is most likely:

A. found in patients with a solitary kidney.
B. associated with transient hyperreninemia.
C. persistent after relieving the obstruction.
D. associated with a demonstrable renovascular lesion.
E. due to sodium and water retention.

63. A 52-year-old man has SWL of a 22 mm left renal pelvic stone. A 3 cm steinstrasse is found on a one week post-treatment radiograph. He is asymptomatic, even though a renal ultrasound examination shows moderate hydronephrosis. He returns in one month with a fever of 39.5° C. CT urogram shows markedly delayed function of his left kidney. This problem should be managed with antibiotics and:

A. medical expulsive therapy.
B. percutaneous nephrostomy.
C. ureteral stent.
D. ureteroscopic extraction of the fragments.
E. SWL of the leading fragments.

64. A 24-year-old sexually active homosexual man has a solitary erythematous nodule on the penile shaft. He does not have a urethral discharge. Purulent material is expressed from the nodule and culture on Thayer-Martin medium reveals oxidase positive colonies. The most likely diagnosis is:

A. primary syphilis.
B. gonorrhea.
C. chancroid.
D. lymphogranuloma venereum.
E. Kaposi's sarcoma.

65. The risk of serious illness or death to a surgeon who suffers a needle stick during the course of surgery is greatest if the patient:

A. has asymptomatic untreated HIV infection.
B. has a history of clinical hepatitis.
C. has AIDS treated with AZT.
D. is hepatitis B surface antigen positive.
E. is hepatitis A positive.

66. A 50-year-old man who is receiving exogenous testosterone for treatment of erectile dysfunction will have:

A. decreased semen volume.
B. decreased sperm count.
C. increased FSH.
D. increased LH.
E. increased prolactin.

67. A 48-year-old man has a two-week history of low back pain and difficulty voiding. Physical examination reveals an absent bulbocavernosus reflex and loss of perineal sensation. MRI scan of the spine confirms an L4-L5 disc protrusion. The most likely distribution of his neural injury is:

A. parasympathetic alone.
B. sympathetic alone.
C. pudendal alone.
D. parasympathetic and pudendal.
E. sympathetic and pudendal.

68. Non-gonococcal urethritis not responsive to a full course of tetracycline should be treated with:

A. spectinomycin.
B. ceftriaxone.
C. doxycycline.
D. penicillin.
E. azithromycin.

69. A 45-year-old man with a history of hypertension and significant tobacco use is impotent one year following a crush injury to the pelvis. A penile arteriogram reveals unilateral focal occlusion of the internal pudendal artery. Treatment should be:

A. intracavernous vasoactive injections.
B. dorsal venous ligation.
C. percutaneous angioplasty.
D. arterial revascularization.
E. penile prosthesis.

70. During inflatable penile prosthesis surgery, the device is inspected for proper inflation and deflation after corporotomy closure. At maximal cylinder inflation, the glans flops ventrally over the distal portion of the cylinders. The next step is:

A. complete procedure with cylinders deflated.
B. complete procedure with cylinders inflated.
C. crural plication.
D. fix the glans to the tunica dorsally at the distal ends of the corporal bodies.
E. reassess the corporal bodies for cylinder size.

71. The enzyme deficiency that most commonly leads to genital ambiguity in a 46 XX individual with normal ovaries is:

A. 20,22-desmolase.
B. 17-hydroxylase.
C. 21-hydroxylase.
D. 3B-hydroxysteroid dehydrogenase.
E. 17B-hydroxysteroid dehydrogenase.

72. A 26-year-old sexually active man has a painful 1.0 cm solitary ulcer on the glans penis which is culture positive for H. ducreyi. The next step is:

A. doxycycline.
B. azithromycin.
C. benzathine penicillin G.
D. acyclovir.
E. ciprofloxacin.

73. A 52-year-old woman has persistent urinary frequency, urgency, and urge incontinence after six months of behavioral modification and pelvic floor physiotherapy. Physical examination demonstrates rotational descent of the anterior vaginal wall and a spurt of urine per urethra with deep coughing. The next step is:

A. antimuscarinic medication.
B. use of a pessary.
C. peri-urethral collagen injection.
D. mid-urethral polypropylene sling.
E. autologous fascial bladder neck sling.

74. The most important factor responsible for the frequent recurrence of UTIs in an otherwise healthy young woman is:

A. adhesive fimbriae of uropathogens.
B. specific receptors on urothelial cells.
C. presence of pathogenic coliforms in stool.
D. feminine hygiene practices.
E. method of contraception.

75. An eight-year-old boy is involved in a MVC. A CT scan confirms a right UPJ disruption. He has had a right ureteral reimplant at the age of four years. The next step is:

A. percutaneous nephrostomy.
B. primary ureteropyelostomy.
C. transureteroureterostomy.
D. ileal ureter.
E. nephrectomy.

76. A 67-year-old man had a radical cystectomy and orthotopic diversion ten days ago. He now has feculent material draining from his urinary stents and urethral catheter after an episode of severe post-operative colitis. Within 24 hours, his temperature is 39° C, and his blood pressure is 95/50 mmHg. A CT scan of the abdomen and pelvis reveals an intraperitoneal abscess. Rectal examination is normal. The next step is:

A. percutaneous drain placement.
B. bowel rest with hyperalimentation.
C. bilateral percutaneous nephrostomy tubes.
D. fistula repair with bowel diversion.
E. proximal bowel diversion.

77. Calcium reabsorption in the distal renal tubule is mediated primarily by:

A. Vitamin D.
B. aldosterone.
C. hypocalcemia.
D. urinary sodium.
E. parathyroid hormone.

78. A healthy newborn boy has bilateral Grade 4 VUR. This is most commonly associated with:

A. low outlet resistance.
B. uninhibited detrusor contractions, coordinated voiding.
C. poor bladder compliance.
D. high pressure voiding with high residual.
E. lack of detrusor contractility.

79. A 47-year-old woman with symptomatic stress urinary incontinence develops dyspareunia and postvoid dribbling. A urethral diverticulum is confirmed with a vaginal ultrasound. Videourodynamics demonstrate an open bladder neck at rest, stable filling, and a Valsalva LPP of 70 cm of H_2O. The best treatment is urethral diverticulectomy and:

A. urethral bulking agent if stress urinary incontinence persists.
B. Martius fat pad.
C. pubovaginal fascial bladder neck sling.
D. a synthetic mid-urethral sling.
E. retropubic Burch colposuspension.

80. A 52-year-old man with a history of lung cancer has a 5 cm adrenal mass with an attenuation of 45 Hounsfield units noted on follow-up chest CT scan. Metastatic evaluation is otherwise negative. Serum catecholamines and urinary free cortisol levels are normal. The next step is:

A. MRI scan.
B. PET scan.
C. MIBG scan.
D. percutaneous needle biopsy.
E. adrenalectomy.

81. The earliest clinical manifestation of a tethered spinal cord in children is:

A. constipation.
B. upward Babinski reflex.
C. lower limb weakness, gait abnormality.
D. increased deep tendon reflexes of the lower limb.
E. urinary incontinence secondary to detrusor overactivity.

82. A 72-year-old man has frequency, urgency, and urge incontinence after transurethral microwave treatment. While on an alpha-blocker, his AUA Symptom Score is 20 with a high degree of bother. Pressure flow study shows detrusor overactivity with incontinence, a voiding pressure of 65 cm H_2O, and a flow of 3 ml/sec. PVR=175 cc. The best treatment is:

A. oxybutynin.
B. oxybutynin and 5-alpha-reductase inhibitor.
C. sacral neuromodulation.
D. CIC.
E. TURP.

83. The advantage of a non-refluxing ureterointestinal anastomosis is that it decreases:

A. upper tract colonization.
B. ureterointestinal stricture.
C. pressure transmission to the upper urinary tract.
D. metabolic abnormalities.
E. stone formation.

84. A 30-year-old man with diabetes insipidus has been NPO for 16 hours. He becomes confused, lethargic, and hyperreflexic. The initial fluids given should be:

A. lactated Ringers.
B. D5W.
C. D5W/.2NS.
D. D5W/.45NS.
E. 3% saline.

85. A 38-year-old woman with stress urinary incontinence and recurrent UTIs undergoes urethral diverticulectomy. One month following removal of the catheter, she has constant dribbling incontinence. Examination reveals a 5 mm urethrovaginal fistula in the proximal urethra. The next step is:

A. topical estrogen therapy and suprapubic cystostomy.
B. place urethral catheter and obtain VCUG in three to six weeks.
C. transurethral fulguration of the fistula tract and placement of a urethral catheter.
D. urethrovaginal fistula repair.
E. urethrovaginal fistula repair and midurethral polypropylene sling.

86. The vessel at greatest risk for injury during laparoscopic placement of an umbilical trocar is the:

A. right common iliac vein.
B. vena cava.
C. abdominal aorta.
D. right common iliac artery.
E. inferior mesenteric artery.

87. A 71-year-old man with a history of aortoiliac reconstruction has left flank pain. A noncontrast CT scan reveals obstruction of the left ureter at the pelvic brim. The most likely cause of the obstruction is:

A. compression from an anteriorly placed graft.
B. pseudoaneurysm formation.
C. retroperitoneal fibrosis.
D. ligation of the ureter.
E. ischemia of the ureter.

88. A 72-year-old woman with a history of Hirschsprung's disease and multiple sclerosis has overactive bladder symptoms unresponsive to antimuscarinic medication. Six months ago, she had botulinum toxin injections into her leg for intractable spasms. Her urinalysis is leukocyte and nitrite positive. Botulinum toxin injections into the bladder is contraindicated due to her:

A. age.
B. neurological diagnosis.
C. history of botulinum injection six months previously.
D. history of Hirschsprung's disease.
E. urinalysis.

89. Renal ultrasound reveals an echogenic mass with speed-propagation artifact. The most likely diagnosis is:

A. simple renal cyst.
B. acute focal pyelonephritis (lobar nephronia).
C. intrarenal abscess.
D. angiomyolipoma.
E. RCC.

90. During surgical exploration for penetrating renal trauma, the first major branch of the left renal artery is transected. The renal segment most likely supplied by this branch is:

A. apical.
B. upper anterior.
C. middle anterior.
D. lower.
E. posterior.

91. Vascular reconstruction is recommended in hypertensive patients with:

A. bilateral medial fibroplasia.
B. bilateral ostial atherosclerotic lesions and poorly controlled hypertension on two medications.
C. unilateral 85% renal artery stenosis and a serum creatinine of 1.5 mg/dl.
D. bilateral 70% renal artery stenosis and a serum creatinine of 4.5 mg/dl.
E. bilateral 80% renal artery stenosis and serum creatinine of 2.0 mg/dl.

92. A 35-year-old man with new onset hypertension has a serum K+ of 2.9 mEq/l, a serum aldosterone of 80 ng/dl (normal 2-9 ng/dl) and a low peripheral renin level. An abdominal CT scan shows no adrenal masses. Adrenal venous localization studies show aldosterone levels of 6000 ng/dl and 8 ng/dl from the left and right, respectively. The next step is:

A. MIBG scan.
B. MRI scan with T2 weighted images.
C. left adrenalectomy.
D. ACE inhibitor and K+ supplement.
E. spironolactone.

93. The inferior mesenteric artery is ligated during a RPLND for testis cancer. Blood supply to the sigmoid colon is now derived from which artery:

A. right colic.
B. superior hemorrhoidal.
C. middle hemorrhoidal.
D. sigmoid.
E. middle sacral.

94. A 75-year-old man is scheduled to undergo cataract surgery. He is currently taking tamsulosin, doxazosin, and metoprolol. The medication(s) associated with intra-operative floppy iris syndrome is/are:

A. tamsulosin.
B. doxazosin.
C. metoprolol.
D. tamsulosin and doxazosin.
E. tamsulosin and metoprolol.

95. A 35-year-old Cushingoid woman undergoes left adrenalectomy for a small adrenal adenoma. Postoperative cortisol levels remain high. Her serum ACTH is low and an MRI scan of the brain is normal. The best therapy is:

A. aminoglutethimide.
B. right adrenalectomy.
C. ketoconazole.
D. ortho-para DDD.
E. metyrapone.

96. A four-year-old boy is undergoing salvage cystoprostatectomy for rhabdomyosarcoma after failing chemotherapy and XRT. The best urinary diversion is:

A. ileal loop.
B. Kock pouch.
C. ileocolonic pouch.
D. sigmoid conduit.
E. transverse colon conduit.

97. A 27-year-old quadriplegic woman has urinary incontinence. Videourodynamics reveal a detrusor LPP of 65 cm H_2O at 100 ml without VUR. Abdominal LPP is 105 cm H_2O. The best management is:

A. indwelling urethral catheter.
B. intradetrusor botulinum toxin injection.
C. ileovesicostomy.
D. augmentation cystoplasty and pubovaginal fascial sling.
E. appendicovesicostomy and augmentation cystoplasty.

98. A 50-year-old woman undergoes radical nephrectomy. Pathology reveals collecting duct carcinoma with invasion of the perinephric fat and microscopic involvement of one hilar node. Her metastatic evaluation is otherwise negative. The next step is:

A. observation.
B. XRT to the flank.
C. cisplatin and 5-FU.
D. tyrosine kinase inhibitor.
E. M-VAC chemotherapy.

99. A 50-year-old man who underwent radical cystoprostatectomy and orthotopic bladder reconstruction five years ago develops congestive heart failure. The best treatment for his persistent hyperchloremic metabolic acidosis is:

A. furosemide.
B. citric acid and sodium citrate.
C. sodium bicarbonate.
D. chlorpromazine.
E. potassium citrate.

100. A 47-year-old woman undergoes a mid-urethral sling for the treatment of stress urinary incontinence. Optimal postoperative prophylaxis against DVT should include early postoperative ambulation and:

A. nothing else.
B. graduated compression stockings.
C. intermittent pneumatic compression.
D. aspirin.
E. low molecular weight heparin.

101. The chemotherapeutic agent most likely to be associated with increased toxicity because of reabsorption from an ileal neobladder is:

A. methotrexate.
B. gemcitabine.
C. vincristine.
D. doxorubicin.
E. cisplatin.

102. A 12-year-old boy complains of intermittent right scrotal pain two weeks after being kicked in the groin. Both physical examination of the scrotal contents and urinalysis during an episode of pain are normal. Doppler ultrasound of the testis demonstrates normal flow, and a 5 mm subtunical cystic lesion in the lower pole of the right testes without internal echoes or calcification. The next step is:

A. radical orchiectomy.
B. scrotal exploration and biopsy of the lower pole lesion.
C. repeat physical examination and urinalysis in three months.
D. repeat ultrasound in three months.
E. bilateral orchiopexy.

103. A 62-year-old man with bothersome LUTS has an AUA Symptom Score of 26, despite an adequate trial of an alpha-blocker and finasteride. DRE reveals a 40 gm benign prostate. PSA six months ago was 2.3 ng/ml. Prior to KTP laser prostatectomy, the next step is:

A. urinalysis.
B. repeat PSA.
C. uroflowmetry
D. cystoscopy.
E. pressure flow urodynamics.

104. In women with invasive carcinoma of the proximal urethra, the primary lymphatic nodes for metastatic disease are the:

A. superficial inguinal.
B. deep inguinal.
C. external iliac.
D. hypogastric.
E. obturator.

105. A four-year-old girl with bilateral grade 3 VUR has two breakthrough UTIs in six months. She has three to four episodes of urinary incontinence per day and two hard bowel movements per week. She is neurologically normal. A DMSA renal scan is normal. The next step is:

A. bilateral subureteric injection.
B. bilateral reimplantation.
C. oxybutynin and timed voiding.
D. treatment of constipation and bilateral subureteric injections.
E. treatment of constipation and timed voiding.

106. The most common complaint following 16-dot plication for Peyronie's disease is:

A. pain with erection.
B. decreased penile sensation.
C. discomfort in the area of the suture.
D. penile shortening.
E. narrowing of penile girth.

107. Deletions or mutations on chromosome 3 are most common in which histologic subtype of RCC:

A. clear cell.
B. chromophobe.
C. collecting duct.
D. medullary cell.
E. papillary.

108. A four-year-old boy has renal failure due to membrano-proliferative glomerulonephritis. He has undergone a bilateral orchiopexy and proximal hypospadias repair as an infant. He is at greatest risk for development of:

A. gonadoblastoma.
B. NSGCT.
C. Sertoli cell tumor.
D. Wilms' tumor.
E. RCC.

109. The urodynamic finding most predictive of new onset hydronephrosis in a 32-year-old T10 spinal cord injured man managed with antimuscarinic medication and CIC is:

A. bladder compliance < 10 ml/cm H_2O.
B. involuntary bladder contraction amplitude of > 100 cm H_2O.
C. detrusor LPP < 25 cm H_2O.
D. maximum urethral closure pressure > 100 cm H_2O.
E. detrusor areflexia at bladder capacity.

110. A 57-year-old woman has an incidentally discovered 3.0 cm right lower pole renal mass. On CT images, the mass is heterogeneous, appears to extend beyond the capsule of the kidney, and enhances after administration of I.V. contrast. The mass measures +70 to +80 Hounsfield units with a small region within the tumor that measures -80 Hounsfield units. The left kidney appears normal. The next step is:

A. repeat CT scan in one year.
B. selective angiographic embolization.
C. laparoscopic cryoablation.
D. lower pole partial nephrectomy.
E. radical nephrectomy.

111. A 38-year-old man has diarrhea and loses two liters of isotonic fluid. He drinks two liters of water for fluid replacement. These fluid shifts result in:

A. decreased renin secretion.
B. decreased aldosterone secretion.
C. two liters of water added to the extracellular fluid.
D. decreased ADH secretion.
E. water moving from intracellular fluid to extracellular fluid.

112. A patient complains of lack of erectile efficacy with 20 mg of tadalafil. He has used it six times and always takes it with dinner. The next step in treatment is:

A. continue 20 mg of tadalafil.
B. take on an empty stomach.
C. increase the dose of tadalafil.
D. change to vardenafil.
E. change to intracorporal alprostadil.

113. A 22-year-old man treated with bleomycin, etoposide, and cis-platinum for a Stage II mixed germ cell tumor of the testis has a residual abdominal mass. Preoperative pulmonary function testing discloses a mild reduction in forced vital capacity. The most important factor in minimizing the risk of post-operative pulmonary problems after RPLND is limitation of:

A. inspired oxygen concentration.
B. the extent of resection.
C. perioperative steroids.
D. I.V. fluids.
E. the length of the incision.

114. The development of acute renal failure following the I.V. administration of iodinated contrast material is most frequently associated with:

A. the presence of diabetes mellitus.
B. pre-existing cardiovascular disease.
C. lack of hydration.
D. multiple drug allergies.
E. previous allergic reaction.

115. The concomitant condition that would place a woman with asymptomatic bacteruria at greatest risk for developing a symptomatic UTI is:

A. type I diabetes mellitus.
B. type II diabetes mellitus.
C. hypertension.
D. hypothyroidism.
E. hyperthyroidism.

116. A 61-year-man complains of new onset of nocturnal incontinence two years after cystectomy and orthotopic ileal neobladder. He has daytime continence. The nocturnal incontinence persists despite restricting fluids for several hours before retiring. The next step is:

A. Kegel exercises.
B. oral anticholinergics.
C. determine PVR.
D. augmentation of the neobladder.
E. artifical urinary sphincter.

117. Spontaneous bladder perforation after enterocystoplasty is most likely the result of:

A. transmural cystitis.
B. mucous plug.
C. catheter trauma.
D. ischemic necrosis.
E. bladder malignancy.

118. The most significant difference between ureteroscopy and SWL in the treatment of a 1 cm lower pole kidney stone is:

A. stone free rate.
B. need for stenting.
C. length of stay.
D. postoperative complication rate.
E. return to work.

119. A 67-year-old man has adenocarcinoma of the bladder located on the lateral wall, 3 cm cephalad to the left ureteral orifice. Abdominal and pelvic CT scan and chest radiograph show no evidence of metastatic disease. The next step is:

A. colonoscopy.
B. pelvic MRI scan.
C. repeat TURBT.
D. partial cystectomy.
E. radical cystectomy.

120. Compensatory renal growth in a child with a multicystic dysplastic kidney is most likely completed by:

A. first trimester.
B. birth.
C. age two.
D. adolescence.
E. one year after the multicystic dysplastic kidney is removed.

121. In well-controlled diabetic patients, which class of drug should be stopped 48 hours prior to elective major surgery:

A. glargine.
B. insulin.
C. rosiglitazone.
D. chlorpropamide.
E. metformin.

122. A 49-year-old man with poor libido and erectile dysfunction has a testosterone level of 122 ng/dl (normal 200-800 ng/dl). He has mild bilateral testicular atrophy, and his prostate is approximately 15 g size, without induration or nodules. His serum PSA is 2.1 ng/ml. The next step is:

A. antibiotics and repeat PSA in six weeks.
B. free testosterone level.
C. testosterone supplementation.
D. TRUS-guided prostate biopsy.
E. % free PSA.

123. The normal epithelium of the distal bulbar urethra in the adult male is:

A. transitional.
B. stratified squamous.
C. pseudostratified columnar.
D. columnar.
E. keratinized stratified squamous.

124. A 53-year-old woman has recurrent Proteus mirabilis urinary infections. CT scan shows a right renal staghorn calculus. Urine culture is negative. The next step is:

A. staged SWL with stent.
B. ureteroscopy with laser lithotripsy.
C. percutaneous nephrolithotomy.
D. acetohydroxamic acid.
E. percutaneous nephrostomy with hemiacidrin irrigation.

125. Cystoscopy in a man often induces an increase in:

A. free PSA.
B. complexed PSA.
C. complexed/total PSA ratio.
D. PSA velocity.
E. prostate volume.

126. A five-year-old boy with hepatosplenomegaly develops progressive azotemia and a renal concentrating defect. Ultrasound of the kidneys demonstrates slight enlargement with multiple small (1-2 mm) cortical cysts. An uncle died of renal disease. The most likely diagnosis is:

A. familial juvenile nephrophthisis.
B. autosomal recessive polycystic kidney disease.
C. autosomal dominant polycystic kidney disease.
D. tuberous sclerosis.
E. renal-retinal dysplasia.

127. Routine office cystoscopy in a woman who has urinary frequency, urgency and bladder pain with negative urine cultures is done primarily to identify:

A. glomerulations.
B. urethral diverticulum.
C. cystitis cystica.
D. squamous metaplasia.
E. urothelial tumor.

128. A 49-year-old women has chronic renal insufficiency (Cr 2.1 mg/dl). A CT scan reveals stable mild bilateral hydronephrosis, small non-obstructing renal stones, and a soft-tissue filling defect in the right ureter midway between the UPJ and iliac vessels. Cystoscopy and urine cytology are normal. On ureteroscopy a papillary lesion is completely excised, and histology reveals a low grade noninvasive TCC. The next step is:

A. retrograde ureterogram and ureteroscopy in three months.
B. ureteral stent placement and intravesical BCG.
C. segmental ureterectomy.
D. distal ureterectomy with Boari flap.
E. nephroureterectomy.

129. The boundaries of the femoral triangle are the inguinal ligament:

A. adductor longus, and vastus medialis.
B. pectineus, and iliopsoas.
C. pectineus, and sartorius.
D. adductor longus, and pectineus.
E. adductor longus, and sartorius.

130. During an open gynecological procedure, the most common cause of a ureteral injury is:

A. uncontrolled bleeding from a uterine artery.
B. ureteral entrapment when ligating the ovarian pedicle.
C. ureteral damage during incision of the broad ligament.
D. mistaking the ureter for the round ligament.
E. ureteral damage while oversewing the vaginal cuff.

131. The intravesical agent that decreases recurrence rates when given within six hours of initial transurethral resection of a nonmuscle invasive bladder tumor is:

A. BCG.
B. thiotepa.
C. mitomycin C.
D. valrubicin.
E. interferon.

132. An oliguric patient has a spot urine sodium of 8 mEq/l. The condition most consistent with this laboratory finding is:

A. prerenal azotemia.
B. acute tubular necrosis.
C. chronic pyelonephritis.
D. renal tubular acidosis.
E. acute urinary obstruction.

133. A 33-year-old man has active genitourinary tuberculosis. His community has a 12% incidence of isoniazid resistant (INH) Mycobacterium. The initial treatment is INH and:

A. rifampin.
B. rifampin, pyrazinamide.
C. rifampin, ethambutol, pyrazinamide.
D. rifampin, streptomycin.
E. pyrazinamide, streptomycin.

134. A 45-year-old man develops irritative symptoms and a fever of 39° C after beginning induction intravesical BCG therapy. The fever persists for three days despite administration of acetaminophen. Urinalysis reveals microscopic hematuria. After stopping BCG, the next step is:

A. one week of fluoroquinolone antibiotic.
B. one week of fluoroquinolone antibiotic followed by suppressive antibiotic therapy.
C. isoniazid for three months.
D. isoniazid and rifampin for six months.
E. isoniazid, rifampin, and ethambutol for six months.

135. An eight-year-old boy with spina bifida is managed with CIC. He has chronic bacteriuria but normal renal function and no reflux. The most appropriate management is:

A. sterile intermittent catheterization.
B. antibiotic suppression.
C. cystoscopy.
D. observation.
E. intravesical antibiotics.

136. A 24-year-old infertile man has a normal physical examination, serum testosterone of 340 ng/dl and isolated oligospermia with normal volume on two semen analyses. His wife's evaluation is normal. The next step is:

A. repeat semen analysis.
B. antisperm antibody testing.
C. scrotal ultrasound.
D. intrauterine insemination.
E. adoption.

137. A 66-year-old woman develops lung and lymph node metastasis two years following radical nephrectomy for a T3bN0M0 grade 3 clear cell RCC. Despite high-dose IL-2, she has disease progression at nodal sites six months later. Her performance status is excellent. The next step is:

A. palliative care.
B. sorafenib.
C. gemcitabine and 5-FU.
D. combination IL-2 and interferon alpha.
E. allogenic stem cell transplant.

138. An increased risk of genitourinary abnormality in the neonate is associated with:

A. newborn serum creatinine of 1.2 mg/dl.
B. maternal insulin-dependent diabetes.
C. maternal hypertension.
D. no urine from infant in first 20 hours.
E. maternal history of multicystic kidney.

139. The factor that most likely predicts stent failure in patients with ureteral obstruction due to extrinsic compression is:

A. pain.
B. bilateral obstruction.
C. malignant obstruction.
D. distal ureteral obstruction.
E. the presence of a vascular graft.

140. A 62-year-old man with minimal LUTS prior to treatment develops urinary retention three weeks after undergoing ^{125}I brachytherapy for prostate cancer despite tamsulosin 0.8 mg daily. Over the next nine months, he fails repeated voiding trials, refuses to perform CIC and has an indwelling urethral catheter. His prostate volume is 25 gm. The next step is:

A. finasteride.
B. leuprolide acetate.
C. suprapubic catheter.
D. TUMT.
E. TURP.

141. The nerve that may be easily trapped by the tacking sutures during a psoas hitch procedure is the:

A. genitofemoral.
B. ilioinguinal.
C. iliohypogastric.
D. femoral.
E. lateral femoral cutaneous.

142. A 34-year-old man has azoospermia with a seminal volume of 2 ml and pH of 8.3. Physical exam shows small soft testicles each with a normal vas and epididymis. FSH is elevated to 3.5 times normal. The next step is:

A. semen fructose determination.
B. karyotype and Y chromosome microdeletion assay.
C. fine needle testicular aspiration.
D. scrotal exploration with testis biopsy and vasography.
E. testicular microdissection and cryopreservation of sperm.

143. A 52-year-old woman with a recently diagnosed melanoma undergoes a staging abdominal CT scan that reveals a round 2.8 cm cystic mass in the right kidney and a normal left kidney. On pre- and post-contrast images, the mass measures 71 and 74 Hounsfield units, respectively. The next step is:

A. observation.
B. renal MRI scan.
C. PET scan.
D. needle biopsy.
E. partial nephrectomy.

144. A five-day-old boy has vomiting and dehydration. His serum CO_2 is 12 mEq/l, K^+ 5.5 mEq/l, and creatinine 2.2 mg/dl. A VCUG demonstrates posterior urethral valves and bilateral Grade 4 vesicoureteral reflux. The next step is:

A. percutaneous cystostomy.
B. percutaneous nephrostomies.
C. valve ablation.
D. urethral catheter drainage.
E. cutaneous vesicostomy.

145. A 28-year-old woman has a history of recurrent urolithiasis. A spiral CT scan shows nephrocalcinosis and a 3 mm right distal ureteral stone. Serum potassium is 3.2 mEq/l, CO_2 18 mEq/l, creatinine 0.8 mEq/l. Urine pH is 6.0. The most likely stone composition is:

A. uric acid.
B. cystine.
C. magnesium ammonium phosphate.
D. calcium phosphate.
E. hydroxyapatite.

146. The optimal stoma site for the of an ileal conduit is:

A. 2 cm superior and lateral to the umbilicus.
B. 5 cm lateral to the incision at the belt line.
C. in the mid-axillary line lateral to the umbilicus.
D. through the rectus muscle at the peak of the fat roll.
E. lateral to the rectus muscle at the peak of the fat roll.

147. The radionuclide that has the best tissue to background ratio is:

A. 99mTc-DTPA.
B. 99mTc-MAG-3.
C. 99mTc-DMSA.
D. 99mTc-glucoheptonate.
E. 123 I-iodohippuran.

148. A 45-year-old man has recurrent calcium oxalate nephrolithiasis. Serum calcium and electrolytes are normal, while 24-hour urine demonstrates hypercalciuria. His diet should consist of:

A. high animal protein, normal sodium, low calcium.
B. low animal protein, low sodium, low calcium.
C. low animal protein, low sodium, normal calcium.
D. normal animal protein, low sodium, low calcium.
E. normal animal protein, normal sodium, low calcium.

149. When comparing post-prostate biopsy hemorrhage to prostate cancer, the signal intensity of prostate cancer on T1 and T2 weighted MRI images is:

A. high T1 and high T2.
B. low T1 and high T2.
C. high T1 and low T2.
D. low T1 and low T2.
E. intermediate T1 and high T2.

150. Stabilization of the myocardium during life-threatening hyperkalemia associated with loss of P waves and widening of the QRS complex on the electrocardiogram is best accomplished using:

A. I.V. calcium gluconate.
B. I.V. $NaHCO_3$.
C. 10% glucose with regular insulin.
D. potassium exchange resin with sorbitol.
E. hemodialysis.

American Urological Association Education and Research, Inc.
Office of Education

2010 Self-Assessment Study Program

Part II - Study Booklet
Comments, References, and Answers

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EXPLANATION TO PARTICIPANTS

SELF-ASSESSMENT STUDY PROGRAM

INTRODUCTION

This study booklet provides a valuable study program and should prove to be the most significant part of the Self-Assessment Study Program for you. You are urged to set aside time on several different occasions to analyze your reasoning processes as compared to those of the Examination Committee. To properly complete this part of the learning experience, it is estimated that you will need to spend approximately 20 hours reading references and related materials.

It is important for the subscriber to read very carefully the comments as to why the answer is deemed to be the "most correct" or "best answer". You may have selected the right answer but your logic in selecting it may differ from that of the Examination Committee. It is also very important to obtain and read the references given so that you may gain the maximum benefit of this Self-Assessment Study Program. We recommend that you do this reading even if you selected the right answer to the question.

In closing, we recommend that you save and file all of your Self-Assessment Study Program materials. They will assist you in comparing your progress in the next SASP, and will remain valuable resource information for your practice.

SCORING

Your results are based on the total number of points you scored out of the possible 750 for the entire examination.

In the Comments and References Section the response which is deemed to be the correct answer is provided.

EXPLANATION OF PARTICIPANT PROFILE

Identification Information: Please check to be sure this corresponds with the information you filled in on your answer sheet so you can verify that you have received the appropriate report.

Type of Question: Each question is assigned to two categories for analysis and reporting. They are: 1) Problem Area and 2) Patient Type.

1) **Problem Area:** Each question is assigned to one of eleven Problem Areas.

   a. Calculous Disease
   b. Congenital Anomalies, Embryology, Anatomy
   c. Fluid & Electrolyte, Transplantation, Hypertension, Vascular Disease, Nephrology
   d. Infection, Inflammatory Disease
   e. Neoplasm
   f. Neurogenic Bladder, Voiding Dysfunction, Incontinence
   g. Obstructive Uropathy
   h. Physiology, Immunology
   i. Sexual Dysfunction, Endocrinopathy, Fertility Problems
   j. Trauma, Fistulae
   k. Urinary Diversion

2) **Patient Type:**

   a. Adult
   b. General
   c. Pediatric

Number of Items: Indicates the number of examination items (questions) that were classified in each content area.

Participant Average: Indicates the percent score earned by the participant when his performance on the items was tabulated. The percent score on the total examination is also indicated at the bottom.

All data concerning performance on the Self-Assessment Study Program is processed in a secure section of the Office of Education, and the results are confidential.

EXPLANATION OF THE PEER GROUP ANALYSIS

This report indicates the performance of the participant's peer group and offers the opportunity for comparing the peer group performance to the average of all participants who completed the examination. The Peer Group is identified at the top of the report. Be sure it is accurate for you. Years since completion of residency training determined into which peer group you were categorized.

1 - 5 years	16 - 25 years
6 - 10 years	26 - 35 years
11 - 15 years	Over 35 years

0 years - Resident

Type of Question: Lists the content categories into which items were classified.

Percent Averages: Peer Group percentage is the average score for your Peer Group in each content area and on the total examination. All Groups is the average score of all examination participants in each content area and on the total examination.

Total Examination: Total average when all items of the examination are calculated.

Number of Participants in Peer Group: Number of participants in your peer group used to compute your percentile ranking which is located on the bottom of your Participant Profile.

Question #1 **ANSWER=A**

As the bladder fills, resting pressure within the intravesical ureter increases. This results in an increase in intraluminal (ureteral) pressure and an increase in the frequency of ureteral contractions. The end result is continued excretion of urine into the filling bladder.

Weiss RM: Physiology and pharmacology of the renal pelvis and ureter, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 3, chap 55, pp 1908-1909.

Question #2 **ANSWER=B**

This is an excellent patient for an endopyelotomy. For "secondary" UPJ obstruction, it is reasonable to recommend an open or laparoscopic approach to any patient who has failed a primary endourologic management and an endourologic approach to those who have failed an open or laparoscopic repair. The results of endourologic management in this setting are generally excellent. Ureteral stenting and balloon dilation are not good long-term options and nephrectomy is not necessary at this point.

Hsu THS, Streem SB, Nakada SY: Management of upper urinary tract obstruction, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 2, chap 38, p 1232.

Question #3 **ANSWER=E**

Attempts at bladder sparing must be selective; not all patients with muscle invasive disease are candidates. Favorable selection criteria include tumors that can be substantially removed by TUR and making certain that a complete response following initial chemoradiation induction is achieved, as measured by follow-up cytology and cystoscopic biopsies. Only if there is a complete response with induction therapy is consolidation chemotherapy recommended. If residual disease is found, cystectomy is recommended.

Kaufman DS, Althausen AF, Heney NM, et al: Selective bladder preservation by combined modality treatment, in Richie JP, D'Amico AV (eds): UROLOGIC ONCOLOGY. Philadelphia, Elsevier Saunders, 2005, chap 22, pp 389-390.

Question #4 **ANSWER=E**

Exogenous androgen, gonadotropin and vitamin therapy do not restore potency in the diabetic male. Even with good control of the underlying diabetes, erectile dysfunction usually persists. Alternative therapies such as sildenafil citrate, intracavernous injection therapy, and a vacuum erection device can also be effective in many of these patients. Some diabetic patients will ultimately require a penile prosthesis.

Lue TF: Physiology of penile erection and pathophysiology of erectile dysfunction, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 1, chap 21, pp 746-747.

Question #5 **ANSWER=D**

Results of standard IVF or ICSI are extremely poor in women over age 40. Current data demonstrate a 4% live birth rate per cycle in 44 year old women. With donor eggs the pregnancy rate is approximately 50%. The overall rate of pregnancy after vasoepididymostomy is 30-50% but is dramatically lower with a wife of age 40.

Assisted Reproductive Technology (ART) Report: Section 4—ART cycles using donor eggs. Centers for Disease Control and Prevention, 2006, figure 44. http://www.cdc.gov/ART/ART2006/sect4_fig44-48.htm#f45

Gerrard ER Jr, Sandlow JI, Oster RA, et al: Effect of female partner age on pregnancy rates after vasectomy reversal. FERTIL STERIL 2007;87:1340-1344.

Question #6 **ANSWER=B**

The imaging studies show a large complex cystic lesion that is not the result of an infectious process. The lesion is not typical for inherited cystic disease and parental evaluation is of no value. The differential diagnosis is either a cystic Wilms' vs. a multilocular cystic nephroma. Diagnosis and treatment should be made based on the pathology following a nephrectomy.

Glassberg KI: Renal dysgenesis and cystic disease of the kidney, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 4, chap 114, pp 3340-3343.

Question #7

ANSWER=C

Patients with medial fibroplasia seldom have an increase in serum creatinine, reduction in kidney size, or loss of renal function. Despite the progressive nature of this disease, progressive arterial occlusion is relatively rare. Therefore, renal revascularization for preservation of renal function need not be routinely undertaken even for patients with bilateral disease. Operative intervention or transluminal angioplasty can be limited to those patients with hypertension refractory to control with drug therapy. Progressive ischemic nephropathy leading to loss of function is the end stage of the pathophysiology of perimedial or intimal fibroplasia, medial hyperplasia, and atherosclerotic disease.

Novick AC, Fergany A: Renovascular hypertension and ischemic nephropathy, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, chap 36, pp 1159-1160.

Question #8

ANSWER=A

The most common cause of retroperitoneal hemorrhage is rupture of an abdominal aortic aneurysm. Renal and adrenal diseases account for the second and third most common causes respectively. Although both malignant and benign renal tumors may rupture, renal adenocarcinomas account for the majority of hematomas. Follow-up CT imaging after resolution of the hematoma will be necessary to rule-out the presence of a renal tumor that can be hidden by the retroperitoneal and perirenal hematoma.

Zhang JQ, Fielding JR, Zou, KH: Etiology of spontaneous renal hemorrhage: A meta-analysis. J UROL 2002;167:1593-1596.

Question #9

ANSWER=B

Elevated urinary cortisol levels confirm the diagnosis of Cushing's syndrome but do not provide information about the etiology of the condition. The next step to determine the etiology is to measure late afternoon or midnight plasma corticotrophin and cortisol levels. This will determine if the Cushing's is ACTH-dependent or ACTH-independent. If ACTH levels are not elevated, then the likely source is adrenal and an abdominal CT scan with attention to the adrenals is appropriate. However, it is preferable and more efficient to determine if ACTH levels are elevated, as the etiology of the Cushing's is unlikely to be of adrenal origin if ACTH is elevated. High-dose dexamethasone test is indicated if ACTH levels are elevated to determine if the source of the elevated corticotrophin is pituitary. Similarly, the metyrapone test is used to assess whether excess ACTH secretion is pituitary or ectopic in nature and is only appropriate if serum corticotrophin levels are elevated.

Vaughan ED Jr, Blumenfeld JD: Pathophysiology, evaluation, and medical management of adrenal disorders, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 2, chap 53, p 1833.

Question #10 **ANSWER=A**

Significant hemorrhage is the major complication to be anticipated in the performance of an external sphincterotomy. Autonomic dysreflexia would not be anticipated to be a major problem because of the level of the lesion. Autonomic dysreflexia is seen with spinal cord lesions that occur above the level of the sympathetic outflow tract (T6). With appropriate antibiotic coverage, acute urinary tract sepsis is usually not a major problem. Likewise, priapism or impotence are rarely if ever encountered during the performance of this operative procedure.

Wein AJ: Lower urinary tract dysfunction in neurologic injury and disease, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 3, chap 59, pp 2037-2038.

Question #11 **ANSWER=D**

Vascular thrombosis of the intestinal conduit is often related to excessive tension in the mesentery of the chosen bowel segment, a hematoma in the mesentery, or inadvertent ligation of the major blood supply to the conduit. This can lead to necrosis of the stoma or the entire bowel segment. The stoma may normally appear dusky at the termination of the procedure. However, a pink to red appearance of the stoma should develop over the ensuing hours or days. If the stoma worsens in color, the patient develops pain around the stoma, or an obvious urine leak occurs, stomal necrosis is likely. This problem should be corrected on a semi-emergent basis. Loop endoscopy should be performed to determine the extent of ischemia. The extent of ischemia will determine the operative approach. Pressure from a 16 Fr Foley catheter is very unlikely to cause significant ischemia.

Gitlin J, Taneja SS: Complications of conduit urinary diversion, in Taneja SS, Smith RB, Ehrlich RM (eds): COMPLICATIONS OF UROLOGIC SURGERY: PREVENTION AND MANAGEMENT, ed 3. Philadelphia, WB Saunders, 2001, chap 38, p 441.

Question #12 **ANSWER=C**

Temsirolimus acts as an inhibitor of the mammalian target of rapamycin (mTOR). The combination of temsirolimus with interferon alfa was in fact inferior to temsirolimus alone when

treating patients with advanced metastatic RCC. The mode of delivery that has been studied and proven effective in this setting is 25 mg administered weekly. This regimen resulted in a survival advantage in poor risk patients with metastatic RCC.

Hudes G, Carducci M, Tomczak P, et al: Temsirolimus, interferon alfa or both for advanced renal cell carcinoma. NEJM 2007;356:2271-2282.

Question #13 **ANSWER=D**

Incontinence during sexual intercourse is not an infrequent problem and is often incorrectly assumed to be due to stress urinary incontinence. Most women respond to antimuscarinic medication, suggesting the etiology is detrusor overactivity. Behavioral therapy is not effective. Since the mechanism is unrelated to stress incontinence, alpha-agonist, sling, and collagen injection are not indicated.

Serati M, Salvatore S, Uccella S, et al: Urinary incontinence at orgasm: Relation to detrusor overactivity and treatment efficacy. EUR UROL 2008;54:911-915.

Zhan Z, Bohla A, Starer P: Urinary incontinence during orgasm. UROL 1988;31:279-282.

Question #14 **ANSWER=E**

Urinary creatinine provides an assessment of the completeness of a urine collection. In women, it should be 14-21 mg/kg/day and, in men, it should be 20-27 mg/kg/day. This individual over-collected as her urinary creatinine excretion was greater than 30 mg/kg/day. Repeating a urine collection would be the most appropriate step.

Pietrow PK, Preminger GM: Evaluation and medical management of urinary lithiasis, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 2, chap 43, p 1398.

Question #15 **ANSWER=A**

Guidelines for hormone refractory prostate cancer (HRPC) have been established. Patients with evidence of disease progression should have their serum testosterone checked to ensure a castrate level as an initial step. If the testosterone level is not castrate on an LH-RH analogue, then surgical castration should be performed. Once the testosterone is established to be < 50 ng/dl, then the patient's antiandrogen (bicalutamide in this scenario) should be stopped and the patient observed for response to antiandrogen withdrawal. However, the

patient should be maintained on medical or surgical castration continuously to suppress the hormone sensitive population of cancer cells.

Chang SS, Benson MB, Campbell SC, et al: Society of Urologic Oncology (SUO) Position Statement: Redefining the management of hormone-refractory prostate cancer. CANCER 2005;103:11-21

Question #16 **ANSWER=E**

The vacuum constriction device should create penile rigidity sufficient for vaginal penetration in almost all impotent men who are treated. Adequate rigidity should be obtained, as long as the patient does not have significant intracorporal scarring from severe Peyronie's disease or a prior infected penile implant. Vacuum constriction devices even work in patients who have had a penile prosthesis removed. Often patients who are not given adequate instruction initially will not apply sufficient vacuum to fully distend the penis or do not use a small enough compressive ring at the base to achieve adequate rigidity. In these cases, instruction and reassurance is usually all that is necessary.

Lue TF: Physiology of penile erection and pathophysiology of erectile dysfunction, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 1, chap 21, p 783.

Question #17 **ANSWER=C**

The ultrasound demonstrates a duplicated system with upper pole hydronephrosis. The most likely explanation for this finding in a newborn is an ectopic upper pole ureter. The upper pole of a duplex system has a higher incidence of ectopia than the lower pole ureter because the upper pole ureter originates higher on the mesonephric duct and requires absorption of a longer segment of common excretory duct before it becomes incorporated in the bladder. The hydronephrosis results from distal ureteral obstruction as the ureter passes through the sphincteric mechanism of the bladder neck.UPJ obstruction of the upper pole segment is possible but much less common and would not have a dilated ureter. VUR into the upper pole is possible in association with ectopia, although VUR is usually not present with an ectopic upper pole ureter. A renal cyst or a calyceal diverticulum would be contained within surrounding normal renal tissue.

Schlussel RN, Retik AB: Ectopic ureter, ureterocele, and other anomalies of the ureter, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 4, chap 116, p 3387.

Question #18 **ANSWER=C**

Cytoreductive nephrectomy prior to systemic therapy in patients with metastatic RCC has been offered for a variety of reasons, including palliation of symptoms, potential for spontaneous regression of metastases, and potential improvement in response to systemic immunotherapy. Two randomized trials demonstrated that cytoreductive nephrectomy prior to systemic therapy did not improve response to interferon, but did improve survival. Cytoreductive nephrectomy prior to tyrosine kinase inhibitor has not been evaluated in a randomized trial, and, therefore, it is not known whether it improves response to therapy or survival in this setting. Improvement in drug delivery or reduction of pro-angiogenic factors have likewise not been studied. In this case, it can only be said that nephrectomy will resolve the hematuria.

Campbell SC, Novick AD, Bukowski RM: Renal tumors, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 2, chap 47, pp 1623-1625.

Question #19 **ANSWER=C**

Increased renin with increased aldosterone will lead to an increase in circulatory blood volume. In hepatic venous congestion, aldosterone metabolism is diminished. Adrenal cortical adenoma causes mineralocorticoid excess and increased blood volume. Of all the conditions cited, only catecholamine excess, such as one might see in a patient with pheochromocytoma, is known to be associated with a decreased blood volume. This is the reason that preoperative volume expansion is important in patients with pheochromocytoma.

Vaughan ED Jr, Blumenfeld JD: Pathophysiology, evaluation, and medical management of adrenal disorders, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 2, chap 53, pp 1865-1866.

Question #20 **ANSWER=D**

The management of high-grade PIN has changed in the past five years. With the standard biopsy now including 10 to 12 cores, it is no longer considered mandatory for patients to undergo immediate rebiopsy of their prostate. However, in the setting of accompanying atypical small acinar proliferation (ASAP), immediate rebiopsy and/or additional examination of the original biopsy with deeper sections is usually recommended. In this case, however, the patient has atypical adenomatous hyperplasia (adenosis), which is felt to be a benign process and, therefore, does not require immediate rebiopsy. The patient, therefore, should be treated as if he has isolated high-grade PIN and should have serial PSA monitoring. If the PSA is

increased in six months, repeat biopsy should be considered. If the PSA remains unchanged, however, rebiopsy should not be undertaken in six months.

Zynger DL, Yang XJ: High grade prostatic intraepithelial neoplasia and other atypical lesions of the prostate. AUA UPDATE SERIES 2008, vol 27, lesson 35, p 341.

Question #21 **ANSWER=C**

Thiazides are considered selective medical therapy for patients with renal hypercalciuria. However, thiazide use can be associated with hypokalemia, subsequent intracellular acidosis and significant hypocitraturia. Thiazide-induced hypocitraturia is the most common complication associated with thiazide therapy of hypercalciuria. Thiazides may also cause hyperuricosuria which can also exacerbate calcium stone formation.

Ruml LA, Pearle MS, Pak CYC: Medical therapy, calcium oxalate urolithiasis. UROL CLIN N AM 1997;24:117-133.

Pietrow PK, Preminger GM: Evaluation and medical management of urinary lithiasis, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 2, chap 43, p 1423.

Question #22 **ANSWER=A**

The total amount of creatinine excreted each 24 hours is dependent upon muscle mass and is generally constant. An incomplete collection is suggested by an incorrect amount of total creatinine in a 24-hour specimen; the normal production of creatinine is 1.0 mg/kg/hr.

Shoskes DA, McMahon AW: Renal physiology and pathophysiology, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 2, chap 35, pp 1132-1134.

Question #23 **ANSWER=D**

Following partial nephrectomy, a urinary fistula can develop in up to 17% of patients. This patient has persistent urinary drainage from his partial nephrectomy site despite placement of a ureteral stent. The radiographic studies demonstrate an incomplete duplication of the ureter with the stent in the lower pole moiety. The upper pole system (the site of the partial nephrectomy) remains unstented with persistent drainage. Observation will likely not improve the problem, and the drain should be left alone. The best treatment would be to reposition the stent into the upper pole collecting system and placement of a urethral catheter. Once the

drainage stops, the urethral catheter can be removed, followed by the removal of the drain at a later date. The ureteral stent should be removed last. Greater than 99% of urinary fistula following partial nephrectomy resolve either spontaneously or with endoscopic management.

Novick AC: Open surgery of the kidney, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 2, chap 50, p 1730.

Question #24 **ANSWER=B**

Evidence-based guidelines for the follow up of patients after partial nephrectomy for localized RCC have been published. As with radical nephrectomy, the data indicates that follow up should be tailored according to pathological stage and risk of recurrence. Patients with a solitary remnant kidney are at risk of renal functional deterioration as a result of hyperfiltration injury. Because proteinuria is the initial manifestation of hyperfiltration injury and can be seen even with stable serum creatinines, a urinalysis checking for significant proteinuria, or a 24-hour urine protein measurement should be obtained yearly in patients with a solitary remnant kidney. This is important because dietary (protein restriction) and pharmacologic (angiotensin-converting enzyme inhibitors) intervention may prevent or lessen the damaging effects of hyperfiltration.

Novick AC: Open surgery of the kidney, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 2, chap 50, pp 1730-1731.

Question #25 **ANSWER=E**

Of the conditions listed, the only solid indication for pretransplant nephrectomy is the patient with a well-documented history of pyelonephritis. Pretreatment bilateral nephrectomy is most important in those patients with active infection. The hazards of active infection and immunosuppression certainly justify the risk. There is no indication for nephrectomy in the patient with glomerulonephritis. Patients with polycystic disease do not require bilateral nephrectomy prior to transplantation unless the kidneys are infected, contain abscesses or are too large. Cases of diabetes and medullary cystic disease not associated with UTI need not have pretransplant nephrectomy.

Barry JM, Jordan ML, Conlin MJ: Renal transplantation, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 2, chap 40, p 1298.

Question #26 **ANSWER=D**

The differential diagnosis of low ejaculate volume azoospermia is ejaculatory duct obstruction, hypogonadism, vasal agenesis, ejaculatory failure, and testicular failure. Hypogonadism was excluded by a normal testosterone level and the patient has palpable vasa. Retrograde ejaculation is not present because no sperm are in the post-ejaculate urine. This patient has either testicular failure or an obstruction of the ejaculatory ducts. Seminal vesicle aspiration under transrectal ultrasound guidance will reveal numerous sperm if obstruction is present and is the least invasive method to diagnose this treatable lesion. Ejaculatory duct cannulation is difficult and thus may not diagnose the problem.

Jarow J, Sharlip ID, Belker AM, et al: Report on evaluation of the azoospermic male: An AUA best practice policy and ASRM Practice Committee report. AZOOSPERMIC MALE BEST PRACTICE STATEMENT. American Urological Association Education and Research, Inc, 2001, pp 3-6. http://www.auanet.org/content/guidelines-and-quality-care/clinical-guidelines/main-reports/azoospermicmale.pdf

Question #27 **ANSWER=D**

Micropapillary bladder carcinoma is a rare variant of urothelial carcinoma. As opposed to the standard form of urothelial carcinoma, intravesical BCG therapy appears to be ineffective against micropapillary variant, and therefore restaging TURBT would not change the management. Recent results suggest that the optimal treatment strategy for nonmuscle invasive micropapillary urothelial carcinoma is radical cystectomy performed before progression.

Kamat AM, Gee JR, Dinney CP, et al: The case for early cystectomy in the treatment of nonmuscle invasive micropapillary bladder carcinoma. J UROL 2006;175:881-885.

Question #28 **ANSWER=C**

Forty-four percent of carriers of VHL disease have central nervous system lesions. VHL disease is often associated with headaches and papillary edema due to hemangioblastomas of the cerebellum. In addition, renal tumors are associated with microscopic hematuria. Spinal hemangioblastomas can occur in 24% of patients and are suspected in this individual as a cause for her neurogenic bladder.

Glassberg KI: Renal dysgenesis and cystic disease of the kidney, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 4, chap 114, p 3332.

Question #29

ANSWER=E

Recurrent gross hematuria in young adults occurring after an upper respiratory infection or exercise is the classic presentation of IgA glomerulonephritis (Berger's disease). Back pain and renal colic due to clots may be associated with the hematuria can persist for days or weeks and may recur. Though the course is chronic, young patients generally have a good prognosis. Renal insufficiency develops in approximately 25% of patients, a poor prognosis is more likely in those with older age, heavy proteinuria, hypertension or abnormal renal function at presentation. The pathology evident on renal biopsy is proliferative and confined mostly to mesangial cells. These changes are usually limited to either some glomeruli or lobular segments of a glomerulus. Though deposits of IgA and IgG may be present on biopsy, these findings are not pathognomonic of the disease as mesangial deposits are found in other forms of glomerulonephritis. Renal imaging or endoscopic intervention is not indicated.

Goldfarb DA, Nally JV Jr, Schreiber MJ Jr: Etiology, pathogenesis, and management of renal failure, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 2, chap 41, pp 1345-1352.

Question #30

ANSWER=E

Studies have shown that finasteride 1 mg PO qd has a similar effect on PSA levels as finasteride 5 mg PO qd. Therefore, the PSA must be adjusted by a factor of 2 to get the true value. In this case, the adjusted PSA is 4.8 ng/ml. Therefore, the PSA is elevated and the patient should undergo a prostate needle biopsy. Repeat PSA in 6 or 12 months is not appropriate and may result in a delay in diagnosis. Free/total PSA ratio likely will not add much additional information, as total PSA is above the threshold for biopsy. Stopping finasteride and repeating PSA again may result in delay of diagnosis.

D'Amico AV, Roehrborn CG: Effect of 1 mg/day finasteride on concentrations of serum prostate-specific antigen in men with androgenic alopecia: A randomized controlled trial. LANCET ONCOL 2007;8:21–25.

Question #31

ANSWER=A

Although less common with improved radiation techniques, radiation-induced fistulas are commonly associated with persistent or recurrent cervical cancer. Fistulas may occur during or shortly following XRT as a result of tumor necrosis in the wall of the vagina or bladder. Fistulas that develop one or more years following XRT are attributed to radiation induced endarteritis obliterans with subsequent necrosis of the vaginal and bladder wall. The most important aspect in the management of a patient with a fistula following XRT is to rule out recurrent cervical cancer. Locally recurrent cervical cancer following definitive XRT is

associated with poor survival despite aggressive multimodal management. Fistula repair would not be indicated in the setting of recurrent disease.

Rovner ES: Urinary tract fistula, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 3, chap 72, pp 2327-2328.

Question #32 **ANSWER=E**

Penicillins have proven to be the safest antibiotics for use during pregnancy. However if the patient is allergic to penicillins, they (and the cephalosporins) should not be used. Nitrofurantoin is usually safe but there is a small risk of maternal neuropathy (with long term use) and hemolysis in the fetus with relative G6PD deficiency. Trimethoprim/sulfamethoxazole is best avoided because folic acid antagonists are known teratogens. Tetracycline is contraindicated because of the adverse effects on the mother (hepatotoxicity) and fetus (tooth discoloration and dysplasia). Ciprofloxacin would be contraindicated because of its adverse effects on developing cartilage.

Lumbiganon P, Villar J, Laopaiboon M, et al: World Health Organization Asymptomatic Bacteriuria Trial Group. One-day compared with seven day nitrofurantoin for asymptomatic bacteriuria in pregnancy: A randomized controlled trial. OBSTET GYNECOL 2009;113:339-345.

Question #33 **ANSWER=A**

This patient has a detectable PSA after radical prostatectomy. This is a difficult and controversial topic. Studies have shown that many patients who experience biochemical recurrence after radical prostatectomy never experience clinical symptoms and die of non-prostate cancer related causes. There are certain predictors that allow patients with clinically meaningful recurrences to be differentiated from those who do not require immediate intervention. Specifically, PSA doubling time and Gleason score at the time of prostatectomy, in addition to margin state and pathologic stage, are important predictors of both biochemical and clinical recurrence. In this case, the patient has a low PSA with a long doubling time. In fact, many urologists would not consider this a clinical recurrence. They feel that a biochemical recurrence after radical prostatectomy should be defined as a PSA > 0.2 or 0.4 ng/ml. In addition, there are reports of benign tissue left at the apex causing small rises in PSA that often present like this case. Given the slow doubling time, low Gleason score and favorable pathologic stage, the PSA should continue to be followed, albeit more closely and intervention should be reserved until the PSA doubling time shortens or the total PSA rises to a level unacceptable to the provider and patient. Biopsy of the prostatic bed is not appropriate, as this cannot conclusively rule-out the presence of recurrence and is associated with some morbidity. Bone and/or PET scan add little to the work-up, as it is highly unlikely that there is

radiologically measurable metastatic disease at this PSA level. Intervention with either pelvic radiation or hormones should be reserved, as discussed earlier.

Morris MJ, Scher JI: The clinical state of the rising PSA level after definitive local therapy: A practical approach, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 3, chap 103, pp 3070-3071.

Question #34 **ANSWER=C**

Persistent voiding dysfunction with urgency, frequency, and diurnal urinary incontinence in this age group warrants screening with ultrasound. This image shows a diffusely thickened bladder with the bladder wall measuring > 5 mm (the upper limits of normal). This is a warning sign for outlet obstruction due to either an anatomic abnormality, neurogenic or non-neurogenic cause. This finding cannot be ignored. Cystoscopy can provide evidence for anatomic obstruction but would not be the recommended next step. The child should undergo a VCUG to rule-out the presence of valves. Observation, behavioral modification, and oxybutynin could be considered first in patients with minimal to mild bladder wall thickening since some degree of bladder wall hypertrophy can result from dysfunctional elimination. However, the degree of bladder wall thickening in this patient is greater than one would expect from dysfunctional elimination alone.

Williams CR, Perez LM, Joseph DB: Accuracy of renal-bladder ultrasonography as a screening method to suggest posterior urethral valves. J UROL 2001;165:2245-2247.

Question #35 **ANSWER=C**

The course of adult polycystic disease is often complicated by flank pain, hematuria, nephrolithiasis and urinary tract infections. Infected cysts are a major problem because they are difficult to treat and may progress to intrarenal and perinephric abscesses. Fifty to 75% of patients with polycystic disease, mainly females, are said to develop UTIs during the course of their illness. Renal cysts do not communicate with the collecting system; therefore urine cultures may be negative. If the patient is generally well, antimicrobial therapy is the best first step. However, it may be ineffective because of choice of antibiotic which have poor penetration in the diseased kidneys. Most antibiotics, including aminoglycosides, penicillins, cephalosporins and macrolides penetrate polycystic renal cysts poorly. Drugs that penetrate cysts reasonably well include chloramphenicol, trimethoprim-sulfamethoxazole, clindamycin and ciprofloxacin. In this particular case where the patient is not toxic, oral treatment with ciprofloxacin and close observation is warranted. If the patient does not respond and/or her fever persists while on ciprofloxacin, percutaneous aspiration or drainage of the cyst would be indicated.

Hiyama L, Tang A, Miller LG: Levofloxacin penetration into a renal cyst in a patient with autosomal dominant polycystic kidney disease. AM J KIDNEY DIS 2006;47:9-13.

Elzinga LW, Golper TA, Rashad AL, et al: Ciprofloxacin activity in cyst fluid from polycystic kidneys. ANTIMICROB AGENTS CHEMO 1988;32:844-847.

Question #36 **ANSWER=D**

The Southwest Oncology Group (SWOG) trial 8794 demonstrated that adjuvant radiation reduces the risk of biochemical treatment failure by 50% over radical prostatectomy alone. Four hundred thirty-one subjects with pathologically advanced prostate cancer (extraprostatic extension, positive surgical margins, or seminal vesicle invasion) were randomly assigned to postoperative radiotherapy or observation. Three hundred seventy-four eligible patients had a median follow-up of 10.2 years. For patients with a postsurgical PSA of 0.2 ng/mL, radiation was associated with reductions in the ten year risk of biochemical treatment failure (72% to 42%), local failures (20% to 7%), and distant failures (12% to 4%). Moreover, radiation to the prostate bed reduced the risk of metastatic disease and biochemical failure at all postsurgical PSA levels. It is advisable to wait at least three to four months after surgery to allow complete wound healing and return of urinary continence. If salvage radiotherapy is planned, it should be initiated before the PSA level rises much above 0.5 ng/ml. Although some patients with PSA recurrence are better managed with hormone therapy for PSA relapse, the long-term side effects would make adjuvant radiation the best choice particularly at this early post-operative stage.

Swanson GP, Hussey MA, Tangen CM, et al: Predominant treatment failure in postprostatectomy patients is local: Analysis of patterns of treatment failure in SWOG 8794. J CLIN ONC 2007;25:2225-2229.

Catalona WJ, Han M: Definitive therapy for localized prostate cancer - An overview, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 3, chap 95, pp 2942-2943.

Question #37 **ANSWER=A**

Androgen replacement in hypogonadal men does increase sexual activity and interest. The relationship between androgen replacement and penile erection is not straightforward. When evaluated with nocturnal penile tumescence testing, hypogonadal men demonstrate decreased erectile activity and this abnormality is corrected with testosterone replacement. Laboratory tested erectile responses to erotic films, however, are usually normal in hypogonadal men. These observations are consistent with the conclusion that the major effect of testosterone therapy on sexual function is to enhance libido and not to directly improve penile erection in a sexual setting. None of the other drugs are known to exert these effects.

Lue TF, Broderick GA: Evaluation of nonsurgical management of erectile dysfunction and premature ejaculation, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 1, chap 22, pp 763-764.

Question #38

ANSWER=E

Most major bleeding from the pelvis following blunt trauma can be controlled by packing the pelvis and planned re-exploration and/or angiography with embolization in the radiographic suite. Ligation of hypogastric arteries or veins is seldom helpful in management because bleeding occurs from multiple pelvic veins. On-table arteriography is technically difficult, time consuming, and provides poor images and should therefore not be used. The use of a MAST suit in such cases has not been proven to be effective. Bleeding is due to trauma and unlikely to respond to medical therapy.

Coburn M: Damage control surgery for urologic trauma: An evolving management strategy. J UROL 2002:160:13.Mucha P: Retroperitoneal injury, in Cameron JL (ed): CURRENT SURGICAL THERAPY. St. Louis, Mosby Year Book, 1995, pp 837-843.

Question #39

ANSWER=A

An increasing amount of data has accumulated to suggest that a 2 cm margin may not be necessary in all patients undergoing penile cancer resection. Two specific studies have challenged this surgical issue. In a prospective histologic analysis of 64 penectomy specimens, Agrawal and associates concluded that tumor grade highly correlated with microscopic tumor spread. The maximum proximal histologic extent was 5 mm for grade 1 and grade 2 tumors and 10 mm for grade 3 tumors. After performing a retrospective pathologic review of 12 penectomy specimens, Hoffman and colleagues also found seven patients with disease of pathologic stage T1 or greater with microscopic margins measuring less than 10 mm. None of these patients had disease recurrence at a mean follow-up of 32.4 months. The most important factor in determining risk of residual disease in patients with less than a 2 cm margin is tumor grade. This patient is therefore at low risk of recurrence and should be monitored accordingly.

Pettaway CA, Lynch DF Jr, Davis JW: Tumors of the penis, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 1, chap 31, p 972.

Hoffman MA, Renshaw AA, Loughlin KR: Squamous cell carcinoma of the penis and microscopic pathologic margins: How much margin is needed for local cure? CANCER 1999;85:1565-1568.

Agrawal A, Pai D, Ananthakrishnan N, et al: The histological extent of the local spread of carcinoma of the penis and its therapeutic implications. BJU INT 2000;85:299-301.

Question #40 **ANSWER=A**

There is considerable postoperative edema at the level of the bladder four to six weeks following a tapered ureteroneocystostomy. In addition, high grade VUR results in diminished compliance of the ureter and renal pelvis. Prior to surgery, it is common to see a normal upper tract on renal ultrasound or only minimal hydroureteronephrosis. After surgery the combination of the resistance from the ureteral tunnel and operative edema can unmask the poor compliance of the ureter and kidney resulting in the appearance of significant hydroureteronephrosis. This should not be interpreted as obstruction. When evaluating the immediate post operative ultrasound it is necessary to put it into perspective with the initial degree of ureteral and renal dilation noted on the VCUG and not directly compare it to the preoperative renal ultrasound. In general, there is no major concern for obstruction if the degree of hydronephrosis on the post operative ultrasound correlates with the degree of dilation of the collecting system seen on the preoperative VCUG. Increased dilation due to edema and a poorly compliant system will begin to improve after six weeks. If this dilation persists after several months, a MAG 3 renal scan should be performed to aid in determining if post operative obstruction exists. All of the other options would be too premature at this point in time.

Khoury A, Bagli DJ: Reflux and megaureter, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 4, chap 117, pp 3460-3461.

Question #41 **ANSWER=A**

Cystine stone formation is the only type of metabolic stone disease which can be determined specifically based on the urinary concentration of a specific ionic constituent. In most patients, once the urinary concentration of cystine increases to more than 200 mg of cystine per liter of urine, cystine crystals will precipitate out of solution with subsequent formation of cystine calculi. If one can reduce the cystine concentration below 200 mg per liter, either with increased urinary volume or reductions in cystine excretion, cystine stone disease can be prevented. However, a high percentage of patients with cystine stone disease will also have concurrent metabolic abnormalities and appropriate metabolic evaluation with subsequent treatment should also be instituted.

Pearle MS, Lotan Y: Urinary lithiasis: Etiology, epidemiology, and pathogenesis, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 2, chap 42, p 1385.

Question #42

ANSWER=B

The association between testicular tumors/nodules and CAH has been recognized for many years and are defined as testicular adrenal rest tumors (TART). Tumors are considered to be aberrant adrenal tissue that has descended with the testes and has become hyperplastic due to ACTH stimulation. The recommended treatment of TART consists of increasing the glucocorticoid dose to suppress ACTH secretions. Biopsy and or removal is not indicated unless increasing medical therapy fails. Antibiotics and abdominal pelvic CT scan are not indicated.

Ritchey ML, Shamberger RC: Pediatric urologic oncology, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 4, chap 130, p 3904.

Question #43

ANSWER=E

The majority of arterial ureteral fistulas occur in patients who have had extensive pelvic surgery, XRT, and indwelling ureteral stents. Most fistulas involve the common iliac artery but they can also occur in the hypogastric artery. Patients can experience high volume bleeding resulting in hemodynamic instability. Emergency arteriography should be performed if this complication is suspected. While embolization of the common iliac artery will control hemorrhage, a femoral to femoral artery bypass is required to provide adequate circulation to the ipsilateral lower extremity. Placement of an endovascular stented graft or an autologous vein covered stent are less invasive options obviating the need for vascular reconstructive surgery in a patient with limited life expectancy and are the preferred treatment method. The ureteral stent should be removed and a percutaneous nephrostomy placed after this procedure to limit recurrent fistula formation.

Rovner ES: Urinary tract fistula, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 3, chap 72, pp 2358-2359.

Sexton WJ, Routh WD, McCullough DL, Bare RL: Hypogastric arterial-ureteral fistula. J UROL 1998;159:196-197.

Kerns DB, Darcy MD, Baumann DS, Allen BT: Autologous vein-covered stent for the endovascular management of an iliac artery-ureteral fistula: Case report and review of the literature. J VASC SUR 1996;24:680.

Houshiar AM, Hulbert JC, Bjarnason H, Cragg AH: Percutaneous treatment of an intraoperative arterial injury as a result of endoureterotomy. J UROL 1997;157:2249.

Question #44 **ANSWER=D**

A split thickness skin graft takes much more readily than a full thickness skin graft or a dermal graft because capillary ingrowth into the graft is more rapid. Skin flaps and musculocutaneous flaps have no role in the acute management of avulsion injuries.

Michielsen D, Van Hee R, Neetens C, et al: Burns to the genitalia and the perineum. J UROL 1998:159(2):418-419.

Morey AF, Metro MJ, Carney KJ, Miller KS, McAninch JW: Consensus on genitourinary trauma: External genitalia. BJU INTERN 2004;94(4):507-515.

Question #45 **ANSWER=A**

The flap valve or Mitrofanoff principle gives excellent continence with ease of catheterization in most cases. When the appendix is not available, reconfigured ileum (Monti) is preferred because it gives a uniform tube with a small mesentery in the center that facilitates tunneling into the bladder and creation of an abdominal stoma. Tapered ileum leaves a bulky mesentery along the length of the channel and the mucosal folds are oriented transversely potentially making catheterization difficult. An ileal conduit is not ideal long-term management in children because of long-term upper tract deterioration. An incontinent ileovesicostomy requires an appliance has been documented to be problematic in obese patients. The bladder is likely thickened and small; the chance of a detrusor flap reaching the abdominal wall without being complicated by stomal stenosis is small. Intussuscepted ileum historically has a high failure rate with regards to stomal incontinence.

Adams MC, Joseph DB: Urinary tract reconstruction in children, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 4, chap 124, p 3696.

Question #46 **ANSWER=D**

In the setting of an ileal conduit urinary diversion, ammonium absorption occurs with chloride in exchange for hydrogen and bicarbonate ions, and may be accompanied by renal potassium wasting. This results in a hypokalemic hyperchloremic metabolic acidosis. Hyponatremic hypochloremic hyperkalemic metabolic acidosis occurs with the use of jejunum due to sodium chloride loss with increased reabsorption of potassium and hydrogen ions. Use of stomach may lead to hypochloremic hypokalemic metabolic alkalosis due to hydrogen and chloride loss with renal oversecretion of potassium to compensate for proton loss.

Dahl DM, McDougal WS: Use of Intestinal Segments in Urinary Diversion, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 3, chap 80, p 2570.

Question #47 **ANSWER=C**

Although ureteral peristalsis does increase, and the ureters do dilate during pregnancy, neither of these physiologic changes are associated with decreased stone formation. During the third trimester of pregnancy, urinary citrate levels are known to increase dramatically. Urinary citrate is a potent inhibitor of calcium oxalate crystallization, and should help protect against stone formation. Neither hypocalciuria nor hypouricosuria are routinely associated with pregnancy.

Pearle MS, Lotan Y: Urinary lithiasis: Etiology, epidemiology, and pathogenesis, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 2, chap 42, p 1391.

Question #48 **ANSWER=E**

The critical step in patients undergoing upper pole, partial nephrectomy, to remove a non functional segment, is dissecting the abnormal ureter from the renal hilum so as not to cause vascular injury to the normal lower pole. The adrenal gland should be left in situ and not disturbed. The distal ureter especially in a male is rarely an issue if not completely removed. The lower pole of the kidney can be mobilized for exposure but is not typically necessary. Reduction of the renal pelvis is not an issue.

Schlussel RN, Retik AB: Ectopic ureter, ureterocele, and other anomalies of the ureter, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 4, chap 116, p 3394.

Question #49 **ANSWER=A**

Patients who have undergone an abdominoperineal resection are at risk for developing denervation of not only their bladder but also the urethral sphincter mechanisms. Denervation of the smooth muscle in the area of the bladder neck and membranous urethra places these patients at considerable risk for incontinence following transurethral resection of the prostate. Because of the possibility of urinary incontinence following TURP or TUIP, the preferred management of this patient is continued CIC. Bethanechol is not clinically effective in the doses that can be administered orally. Tamsulosin will not be effective in the absence of effective detrusor contractions.

Wein AJ: Lower urinary tract dysfunction in neurologic injury and disease, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 3, chap 59, p 2032.

Question #50 **ANSWER=B**

The CT is consistent with an infected urachal cyst. Broad spectrum antibiotics without a culture is not prudent. This is not a tumor, therefore biopsy is unnecessary. Excision is definitive therapy but is most appropriate after drainage and treatment of an abscess. Endoscopy may reveal some inflammation at the dome of the bladder but will not be therapeutic or diagnostic.

Frimberger D, Kropp BP: Bladder anomalies in children, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 4, chap 121, pp 3577-3578.

Question #51 **ANSWER=D**

Two major problems are found to exist with cecal or colon stomas 1) stomal stenosis will develop in up to 30% of patients; this can be managed with either stomal revision or placement of a cecostomy tube through the stenotic channel. 2) washout failure, defined as failure to pass little or any of the enema from the rectum within one to two hours following instillation of irrigation fluid. Approximately 5-10% of patients with washout failure will need a diverting colostomy. The maximum amount of tap water that can be used for ACE irrigations before alterations in serum sodium will occur can be calculated by the formula of body weight (kg) x 0.035 L/kg for example in this 30 kg child. 30 kg x 0.035 liters/kg = 1.05 liters maximum volume. The physician may use water volumes higher than what is calculated but the risk of hyponatremia rises with higher volumes, the onset of hyponatremia and the risk of water intoxication will of course be dependent upon the type of fluid instilled and dwell time within the bowel. If water volumes greater than calculations are used the patients serum electrolytes should be checked at monthly intervals until they can be documented to be stable, after that time electrolytes can be checked with routine follow-up. Alternatives to significantly increasing the volume of calculated instilled fluid involve changing irrigant fluid to polyethylene glycol irrigations, long term use of this substance is however associated with the intermittent development of C. difficile colitis. Magnesium citrate or phosphate enemas may be instilled in the ACE prior to washout to decrease irrigant volume however these maneuvers have been associated with resultant hypermagnesemia, hyperphosphatemia and hypocalcemia. In patients with washout failure following high volume irrigations of a right colonic ACE altering the stomal site/colonic tube to the left colon has been documented to reduce the volume of irrigant; result in successful fecal continence and save the majority of these patients from the need for a diverting colostomy.

Malone PS: The antegrade continence enema procedure. BJU INTERN 2004;93:248-249.

Churchill BM, De Ugarte DA, Atkinson JB: Left-colon antegrade continence enema (LACE) procedure for fecal incontinence. J PED SUR 2003;38:1778-1780.

Dey R, Ferguson C, Kenny SE, et al: After the honeymoon - medium-term outcome of antegrade continence enema procedure. J PED SUR 2003;38:65-68.

Yerkes EB, Rink RC, King S, et al: Tap water and the Malone antegrade continence enema: A safe combination? J UROL 2001;166:1476-1478.

Question #52 **ANSWER=D**

During the massive urinary sodium losses occurring during the diuresis phase of acute tubular necrosis, potassium is also lost resulting in life-threatening hypokalemia. During diuresis the Na+/K+ pump is overwhelmed and exchange fails to occur.

Goldfarb DA, Nally Jr, JV, Schreiber Jr, MJ: Etiology, Pathogenesis, and Management of Renal Failure, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 2, chap 35, p 1330.

Question #53 **ANSWER=A**

The fragility of stones determines their ability to be fractured with therapies such as SWL. The fragility of a stone will affect the outcome of therapy. Calcium oxalate monohydrate, brushite and cystine stones have been shown to be the least fragile and are less likely to respond to therapy with SWL.

Lingeman JE, Matlaga BR, Evan AP: Surgical management of upper urinary tract calculi, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 2, chap 44, p 1440.

Question #54 **ANSWER=E**

Observation is a reasonable choice in young couples with infertility of less than one year's duration. However, the finding of round headed sperm is consistent with absence of the acrosome and individuals with this finding are sterile. Standard intrauterine inseminations and in vitro fertilization are unsuccessful because the sperm cannot fertilize an egg without a normal acrosome. Varicocele repair will not improve the morphology. The only method that

will induce a pregnancy using the patient's sperm is in vitro fertilization using intracytoplasmic sperm injection (ICSI). Even regular ICSI has resulted in low pregnancy rates. Current approaches combine assisted oocyte activation with ICSI. The alternative is donor insemination.

Tejera A, Mollá M, Muriel L, et al: Successful pregnancy and childbirth after intracytoplasmic sperm injection with calcium ionophore oocyte activation in a globozoospermic patient. FERTIL STERIL 2008;90:1202-1205.

Meacham RB, Chemes H, Carrell D, Goldstein M: Globozoospermia: Is there a role for varicocele repair? J ANDROL 2007;28:490.

Question #55 **ANSWER=C**

Incidentally discovered small asymptomatic renal tumors do not mandate a waiting period prior to transplantation. Repeating the CT scan with contrast risks further nephrotoxic injury with preexisting borderline renal function, and will not change the management of the renal mass. Although partial nephrectomy may carry the advantage of preserving additional renal mass, this is not applicable to this patient. The appropriate management in this setting is simultaneous nephrectomy and transplantation.

Cohen HT, McGovern FJ: Renal cell carcinoma. NEJM 2005;353:2477-2490.

Barry JM, Jordan ML, Conlin MJ: Renal transplantation, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 2, chap 40, p 1298.

Question #56 **ANSWER=C**

This child likely has a delayed bleed from a renal laceration. The CT demonstrates devitalized areas of the kidney with a collection of blood and urine. This is best managed by embolization after confirmation by arteriogram. Open surgery will more likely result in nephrectomy or heminephrectomy. Percutaneous nephrostomy or retrograde ureterogram will not treat the continued bleeding. A retrograde study would be indicated if one were suspecting a pelvic tear or a UPJ disruption because of medial extravasation.

McAninch W, Santucci RA: Renal and ureteral trauma, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 2, chap 39, p 1282.

Question #57 **ANSWER=E**

The patient has tumor lysis syndrome and early acute oliguric renal failure secondary to uric acid nephropathy. The normal ultrasound without hydronephrosis rules out obstruction as the cause of the renal failure. Initial management is hydration, urinary alkalinization followed by reduction of uric acid with allopurinol. If that fails, hemodialysis may be necessary. Isotope renogram is not indicated. Renal biopsy, to rule out interstitial tumor infiltration, is also not indicated since the circumstance strongly suggests tumor lysis issues. The patient has no ureteral obstruction and, thus, cystoscopy and retrograde pyelogram with stent placement would not be helpful.

Jones DP, Mahmoud H, Chesney RW: Tumor lysis syndrome: Pathogenesis and management. PED NEPHROL 1995;9:206-212.

Goldfarb DA, Nally JV Jr, Schreiber MJ Jr: Etiology, pathogenesis, and management of renal failure, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 2, chap 41, p 1329.

Question #58 **ANSWER=B**

Considerations for apparent early graft dysfunction include infection, renal allograft rejection, urinary or vascular obstruction, cyclosporine or tacrolimus nephrotoxicity, hyperglycemia, and dehydration. A screening work-up consisting of physical exam followed by basic laboratory tests and ultrasound are appropriate. In this case, the prominent physical exam finding of tremor suggests tacrolimus toxicity that can be further evaluated by determining the serum level of the immunosuppressant tacrolimus (calcineurin inhibitor). Mycophenolate mofetil is an antibiotic with immunosuppressive qualities. It is clinically indicated for cardiac and renal transplantation and the treatment of psoriasis and rheumatoid arthritis. Side effects of mycophenolate mofetil include anemia, leukopenia, thrombocytosis, GI bleeding, sepsis, lymphoma, skin cancer, and pulmonary fibrosis. It is not associated with a decrease in renal function. However, its use may result in elevation of tacrolimus and cyclosporin blood levels. The latter may interfere with renal graft function.

Barry JM, Jordan ML, Conlin MJ: Renal transplantation, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 2, chap 40, p 1316.

Question #59 **ANSWER=A**

This patient has adrenal insufficiency secondary to bilateral adrenal hemorrhage. This can occur in anticoagulated patients, typically during the first three weeks of therapy. The initial

therapy should be administration of I.V. fluids and glucocorticoid therapy. Fresh frozen plasma is not acutely indicated with an adequate hemoglobin level. Kayexalate will help lower a high potassium but not the hypotension from adrenal steroid deficiency. Chronic but not acute adrenal insufficiency is treated with fluorohydrocortisone. Vitamin K will help restore clotting factors depleted by warfarin therapy but is not the initial therapy for this patient.

Vaughan ED Jr, Blumenfeld JD: Pathophysiology, evaluation, and medical management of adrenal disorders, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 2, chap 53, pp 1843-1845.

Question #60 **ANSWER=B**

Quadrivalent Human Papillomavirus vaccine immunizes against types 6, 11, 16 and 18. Types 16 and 18 are associated with 70% of cervical cancer cases. Types 6, 11, 16, and 18 are associated with 90% of cases of genital warts. The vaccine has only been tested in females and is indicated in females age 9-26 for the prevention of cervical cancer, precancerous lesions and genital warts caused by these subtypes. There has been no testing of vaccine efficacy in males.

Mahdavi A, Monk BJ: Recent advances in human papillomavirus vaccines. CURR ONCOL REP 2006;8:465-472.

Question #61 **ANSWER=E**

All patients with an output greater than 200 ml/hr have postobstructive diuresis and should be monitored. High risk patients with chronic obstruction, edema, congestive heart failure, hypertension, weight gain and azotemia are most likely to exhibit a postobstructive diuresis after the release of obstruction. In the high risk patient a spot check urine for osmolality, sodium and potassium will allow for the determination of the type of postobstructive diuresis and will guide in further management. High risk patients should have vital signs, including postural blood pressure and output measured hourly. D5 1/2 NS is an appropriate replacement fluid in the patient with an elevated BUN and creatinine but generally replacement is given at half of the previous hours urine output.

Pais Jr VM; Strandhoy JW, Assimos DG: Patholophysiology of Urinary Tract Obstruction, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 2, chap 37, p 1200.

Question #62 **ANSWER=B**

Renin-mediated hypertension sometimes occurs in acute unilateral renal obstruction and may present a clinical picture suggestive of a renovascular etiology; however, angiographic studies do not show a vascular lesion. A transient hyperreninemia initiates the hypertension and the hypertension is probably sustained by complex volume-vasoconstricting abnormalities that are dependent on the duration of the obstruction and the presence of a contralateral normal kidney. The abnormalities are corrected by relieving the obstruction and the blood pressure in turn reverts to normal. This type of hypertension usually does not occur in a solitary hydronephrotic kidney or bilateral hydronephrosis because of compromised renal function with lowering of renin levels due to impairment of overall sodium and water excretion.

Pais VM Jr, Strandhoy JW, Assimos DG: Pathophysiology of urinary tract obstruction, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 2, chap 37, pp 1196-1197.

Question #63 **ANSWER=B**

This patient has steinstrasse and appears to be septic, thus, his upper tract should be drained. Placement of a percutaneous nephrostomy tube is an option that will accomplish this. The fragments will pass spontaneously with a nephrostomy tube in place in upwards of 70% of cases, and thereby avoid ureteroscopic extraction or SWL of the ureteral fragments. Medical expulsive therapy will probably not be effective in this case.

Lingeman JE, Matlaga BR, Evan AP: Surgical management of upper urinary tract calculi, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 2, chap 44, p 1508.

Question #64 **ANSWER=B**

This patient's presentation is lacking in the usual signs and symptoms of gonorrhea, but an oxidase positive culture on Thayer-Martin medium is diagnostic of Neisseria gonorrhea. Thayer-Martin media contain various antibiotics (vancomycin, colistin and nystatin) and specific growth-promoting agents with hemoglobin (sheep's blood) that inhibits or totally suppresses the growth of accompanying bacterial flora while allowing pathogenic Neisseria species to grow normally. Diagnosis of primary syphilis is by darkfield microscopy and direct fluorescence antibody (DFA) test of specimens obtained from the lesion. Alternatively, nontreponemal serologic testing with rapid plasma reagin (RPR) or Venereal Disease Research Laboratory (VDRL) can be used to diagnosis primary syphilis. Chancroid is caused by Haemophilus ducreyi and this organism is fastidious and difficult to culture. Diagnosis is usually made by gram stain showing gram negative streptobacilli. Lymphogranuloma

venereum (LGV) is caused by Chlamydia trachomatis types L1, L2 and L3. The diagnosis of LGV is primarily clinical as cultures are positive only 30-50% of the time from the cutaneous lesions: and accessory glandular infection may be the only manifestations of active gonorrhea. Kaposi's sarcoma is caused by HIV.

Benzaken AS, Galban EG, Antunes W, et al: Diagnosis of gonococcal infection in high risk women using a rapid test. SEXUALLY TRANSM INF 2006;82:26-28.

Question #65 **ANSWER=D**

The risk of hepatitis B virus (HBV) developing into a clinical infection after a needlestick exposure to hepatitis B surface antigen positive blood ranges from 7% to 30%. Between 5% and 10% of persons with acute HBV infection become chronic carriers; 15% to 25% of carriers will eventually die of liver cancer or cirrhosis. The risk of HIV infection after a needlestick exposure to HIV-infected blood is, on the average, approximately 0.4%. Thus, the death rate may be slightly higher with hepatitis exposure, and the morbidity rate is far higher.

Fry DE: Hepatitis: Risks for the surgeon. AM SUR 2000;66:178-183.

Question #66 **ANSWER=B**

Exogenous testosterone will suppress pituitary production of LH and FSH. Prolactin levels will be unaffected. Semen volume, which is dependent on circulating testosterone levels, should be unchanged or increased. However, intratesticular levels of testosterone will decrease, resulting in lower sperm production and decreased sperm concentration.

Lue TF, Broderick GA: Evaluation of nonsurgical management of erectile dysfunction and premature ejaculation, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 1, chap 22, p 773.

Question #67 **ANSWER=D**

The clinical picture is consistent with cauda equina syndrome, which is associated with disc disease (severe central posterior disc protrusion) and other spinal canal pathologies that involve the L4-S2 region. Additional features of the presentation include loss of voluntary control of both anal and urethral sphincters and of sexual responsiveness. The most consistent urodynamic finding is that of a normally compliant areflexic bladder with either normal innervation or incomplete denervation of the perineal floor musculature. Disc protrusions of the lumbar spine interfere with the parasympathetic and somatic innervation of

the lower urinary tract, striated sphincter and other pelvic floor musculature, and afferent activity from the bladder and affected somatic segments to the spinal cord.

Wein AJ: Lower urinary tract dysfunction in neurologic injury and disease, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 3, chap 59, pp 2031-2033.

Question #68 **ANSWER=E**

Nongonococcal urethritis caused by Chlamydia trachomatis or Ureaplasma urealyticum cannot be distinguished clinically, but either tetracycline or azithromycin is usually effective against both. Sexual partners should also be treated. If the signs and symptoms of urethritis do not improve with a tetracycline, infection with tetracycline-resistant U. urealyticum may be present; this usually responds to an azithromycin. Relapse may be due to reinfection by an untreated sexual partner, and the patient and all partners should be retreated. When C. trachomatis causes mucopurulent cervicitis, it usually responds to the same regimen of tetracycline or azithromycin used to treat urethritis.

Takahashi S, Matsukawa M, Kurimura Y, et al: Clinical efficacy of azithromycin for male nongonococcal urethritis. J INFECT CHEMOTHER 2008;14:409-412.

Question #69 **ANSWER=A**

Percutaneous or surgical revascularization of the internal pudendal arteries is not indicated owing to the patient's age and associated atherosclerotic vascular disease secondary to smoking. There is no indication for venous ligation. Owing to the vascular disease, penile injections may not be successful but should be implemented prior to insertion of a penile prosthesis.

Lue TF, Broderick GA: Evaluation of nonsurgical management of erectile dysfunction and premature ejaculation, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 1, chap 22, pp 779-781.

Question #70 **ANSWER=E**

The description suggests an impending supersonic transport (SST) deformity which is a ventral chordee of the glans whereby the distal aspects of the cylinders inadequately extend distally under the glans creating a floppy appearance. The floppy appearance mimics the drooped nose of the Concorde, a supersonic transport. A likely basis for the problem is inadequate

dilatation and sizing of the corporal spaces. If this is identified during prosthesis placement, the corporotomies should be reopened and the corporal bodies inspected to be sure proximal perforation has not occurred. Redilation and re-measurement of corporal bodies are then performed, and the same cylinders can usually be reinserted adding rear-tip extenders to achieve appropriate length. A distal corporal plication ("Ball procedure") is not generally required during initial prosthesis placement. The device should remain in the deflated position at the completion of surgery until the time of device activation and initiation of use to avoid the risks of an unexpanded cavity space for the reservoir (that is associated with autoinflation), penile pain and distal corporal perforation.

Montague DK: Prosthetic surgery for erectile dysfunction, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 1, chap 23, pp 788-801.

Question #71 **ANSWER=C**

A deficiency of 20,22-desmolase, 3B-hydroxysteroid dehydrogenase and 17-hydroxylase enzymes occur with congenital adrenal hyperplasia but rarely cause genital ambiguity in a 46 XX female. 17B-hydroxysteroid dehydrogenase is primarily a testicular enzyme. A 21-hydroxylase deficiency will cause CAH in both sexes but in a 46 XX individual with ovaries it will lead to genital ambiguity. Only enzyme defects beyond the 17-hydroxyprogestone stage of steroid biosynthesis will produce excessive androgenic substances.

Diamond DA: Sexual differentiation: Normal and abnormal, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 4, chap 128, pp 3816-3821.

Question #72 **ANSWER=B**

The patient's findings are classic for chancroid which is due to H. ducreyi. This is the most common sexually transmitted disease worldwide. It affects men three times more than women. It is associated with inguinal adenopathy that is typically unilateral and tender with tendency to become suppurative and fistulize. Single-dose treatment with azithromycin 1 gm orally or ceftriaxone 250 mg intramuscularly is first line therapy. While ciprofloxacin can be a secondary regimen, resistance to ciprofloxacin has been reported in some regions. Patients should be reexamined in five to seven days. Sexual partners should be treated if sexual relations were held within two weeks before or during the eruption of the ulcer.

Frenkl T, Potts J: Sexually transmitted diseases, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 1, chap 11, pp 374-375

Question #73

ANSWER=A

This patient has mixed urinary incontinence. Although a sling or periurethral injectable agent may resolve the stress incontinence demonstrated on physical examination, this is not her primary complaint. A pessary is not indicated since she has no prolapse symptoms and it is not likely to cure her mixed symptoms. Several studies have found that urge predominant mixed urinary incontinence symptoms often respond to antimuscarinics medication.

Khullar V, Hill S, Laval KU, et al: Treatment of urge-predominant mixed urinary incontinence with tolterodine extended release: A randomized, placebo-controlled trial. UROL 2004;64(2):269-274.

Kreder KJ, Brubaker L, Mainprize T: Tolterodine is equally effective in patients with mixed incontinence and those with urge incontinence alone. BJU INTERN 2003;92:418-421.

Question #74

ANSWER=B

Properties of uropathogens, sexual activity, feminine hygiene practices and the use of an IUD and/or spermicide may increase the frequency of UTIs in predisposed women, however they are not the most important etiologic factors. Many women have uropathogenic bacteria present in their bowel, use various contraceptive and hygiene methods, and are sexually active without developing infections. E. coli must colonize the peri-urethral area before an uncomplicated infection can occur. Coliform organisms are recovered only rarely from the region of the vaginal vestibule and external urethra in otherwise healthy women who do not have recurrent UTIs. It is postulated by most researchers that host factors rather than specific pathogenicity of the micro-organisms are the prime determinants of colonization. E. coli tend to adhere more to vaginal and buccal epithelial cells obtained from women with recurrent infection than to controls. This explains why certain women are prone to frequent recurrent infections. It would also explain why women with asymptomatic bacteruria are more prone to recurrent infection with marriage and pregnancy and would account for UTIs associated with intercourse, various contraceptive methods, etc., in highly susceptible women.

Schaeffer AJ, Schaeffer EM: Infections of the urinary tract, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 1, chap 8, pp 233-234.

Question #75

ANSWER=B

Disruption of the ureteropelvic junction in a child secondary to trauma is a prime indicator for operative intervention. His kidney should be salvaged and a percutaneous nephrostomy tube may not be diverting. While the distal blood supply of the ureter has been disrupted due to his

previous surgery, his ureter should still have an adequate blood supply from the middle ureteral vessels. A primary repair is the best treatment option. Transureteroureterostomy would potentially put the contralateral renal unit at risk unnecessarily and not likely to be technically feasible.

Casale AJ: Urinary tract trauma, in Gearhart JP, Rink RC, Mouriquand PDE (eds): PEDIATRIC UROLOGY. Philadelphia, WB Saunders Co, 2001, chap 59, pp 923-943.

Husmann D: Pediatric genitourinary trauma, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 4, chap 132, p 3936.

Question #76 **ANSWER=E**

Nonoperative management is a viable option in selected patients with vesicoenteric fistulas, however, patients chosen for such treatment should be minimally symptomatic with benign fistulas. For those requiring surgical exploration, both one and two stage procedures have been based on clinical circumstances. The decision regarding a one or two stage procedure is influenced by the location and etiology of the fistula, the patient's general condition, the timing of the exploration relative to the original procedure, the presence of pelvic abscess, the presence of colonic obstruction, and the severity of the inflammatory response. Patients without gross fecal contamination can be treated with a one-stage procedure, whereas those with unprepped bowel, gross fecal contamination, severe inflammatory response, or abscess require a two-stage procedure.

Rovner ES: Urinary tract fistula, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 3, chap 72, pp 2351-2352.

Question #77 **ANSWER=E**

Parathyroid hormone mediates renal reabsorption of calcium in the distal nephron. More proximally in the nephron, calcium is reabsorbed in concert with sodium. Vitamin D influences calcium homeostasis primarily by enhancing small bowel absorption. Significant hypocalcemia stimulates renal calcium preservation by inducing parathyroid hormone secretion. Aldosterone mediates distal renal preservation of sodium in exchange for available hydrogen and/or potassium, and has no direct effect on calcium reabsorption.

Pearle MS, Lotan Y: Urinary lithiasis: Etiology, epidemiology, and pathogenesis, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 2, chap 42, p 1372.

Question #78

ANSWER=D

Reflux in newborn boys is commonly high grade and associated with uninhibited detrusor contractions during filling, high pressure voiding due to elevated outlet resistence, detrusor-sphincter dyssynergy, and high postvoid residuals. Uninhibited, detrusor contractions associated with coordinated voiding is normal in infants and not associated with high grade VUR. Compliance and contractility are generally within the range of normal for these boys. The best treatment for infant boys with high grade VUR is prophylactic antibiotics and observation. Most of these infants will decrease their outlet resistance and resolve their VUR with neurourologic maturation during the first year of life.

Yeung CK, Godley ML, Dhillon HK, et al: Urodynamic patterns in infants with normal lower urinary tracts or primary vesico-ureteric reflux. BRI J UROL 1998 81:461-467.

Yeung CK, Sihoe JD, Bauer SB: Voiding dysfunction in children: Non-neurogenic and neurogenic, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 4, chap 123, p 3614.

Question #79

ANSWER=C

This patient will likely have worsening stress urinary incontinence postoperatively. A concomitant pubovaginal fascial sling would treat the stress incontinence and have no increased risk of infection or urethral erosion. Concomitant placement of a synthetic sling should be avoided because of the potential risk of infection and erosion into the urinary tract. A Martius fat pad will not treat the incontinence. Collagen is unlikely to provide long term relief of stress urinary incontinence. It is unnecessary to perform a retropubic exploration at the time of a vaginal incision for urethral diverticulectomy, in addition, the intrinsic sphincter deficiency as suggested by the open bladder neck is treated better with a sling than a Burch procedure.

Rovner ES: Bladder and urethral diverticula, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 3, chap 73, p 2386.

Question #80

ANSWER=D

The CT findings are consistent with a metastatic lesion and percutaneous biopsy is indicated to confirm this diagnosis. If an adrenal mass has an attenuation of less than 0 Hounsfield units (HU), it is considered an adenoma. If the attenuation value is between 0 and 20 HU, chemical shift MRI is recommended. If lipid is detected in the lesion with this test, the mass is most likely an adenoma. Percutaneous biopsy is indicated when the attenuation is greater than 20 HU or if the lesion is otherwise indeterminant. To proceed immediately to an adrenalectomy in

this setting of a previous primary malignancy such as lung cancer is inappropriate until tissue diagnosis is obtained. Treatment options will depend upon pathology of the lesion.

Bhayani SB, Siegel CL: Urinary tract imaging: Basic principles, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 1, chap 4, p 132.

Question #81 **ANSWER=E**

Currently one third of the symptomatic patients undergoing detethering of the spinal cord will present with urologic complaints, 50% will present with the late findings of lower limb weakness/gait disturbance and approximately 15% with back pain. Bowel dysfunction is a rare presenting complaint. Damage from a tethered cord is the result of inadequate oxygen metabolism in the spinal cord. The cord becomes tethered between the site of tethering and where the anterior and posterior nerve roots exit the canal. Repetitive flexion and extension and/or Valsalva activity of any type kinks the arterioles and venules, thereby reducing blood supply to the tethered cord. The clinical findings of tethered cord come from accumulative hypoxemic damage and may occur at any age. The diverse structure of the spinal cord plays a large role in the pathogenesis of this disorder; specifically interneuronal axon connections have the highest oxygen requirements and are the first to become damaged. Clinically, this means the pelvic nerves and the sacral reflex arc will be the first to manifest the hypoxic damage, lower limb weakness and back pain occurring at a later time. Once an MRI scan depicts a tethered or abnormally lying cord, surgical detethering will not correct the MRI picture. Long-term follow up has revealed that up to 20% of tethered cords may redevelop symptomatic findings of re-tethering. The inability of the MRI scan to rule out re-tethering places the urologist and urodynamic testing in a key position. Specifically serial urodynamic tests or electromyography of the muscles involved with the sacral reflex arc are monitored at set intervals usually three months post surgical release of the cord and then again at six to twelve month intervals. Alterations in the urodynamic tests will result in increase attentiveness by the neurosurgeon for the development of re-tethering of the spinal cord.

Yeung CK, Sihoe JD, Bauer SB: Voiding dysfunction in children: Non-neurogenic and neurogenic, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 4, chap 123, pp 3643-3645.

Wein AJ: Lower urinary tract dysfunction in neurologic injury and disease, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 3, chap 59, p 2030.

Question #82 **ANSWER=E**

Urodynamic testing is reasonable in patients who have failed prior operative treatment. In patients who have obstruction and detrusor overactivity relief of the obstruction will generally result in resolution of the detrusor overactivity. Although antimuscarinics may help the patient's symptoms they do not treat the underlying persistent obstruction - clearly present in this case. 5-alpha-reductase inhibitors reduce prostate volumes and modestly improve symptoms but may not treat the underlying obstruction. CIC or neuromodulation will not address the obstruction. TURP is most likely to resolve the obstruction and improve symptoms.

Peterson AC, Webster GD: Urodynamic and videourodynamic evaluation of voiding dysfunction, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 3, chap 58, pp 1995-2000.

Kirby R, Lepor H: Evaluation and nonsurgical management of benign prostatic hyperplasia, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 3, chap 87, pp 2771-2772.

Fitzpatrick JM: Minimally invasive and endoscopic management of benign prostatic hyperplasia, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 3, chap 88, pp 2816-2820.

Question #83 **ANSWER=C**

Non-refluxing ureterointestinal anastomoses do not prevent upper tract colonization. Virtually all upper tract systems are found to be colonized when urine is aspirated above the non-refluxing anastomoses. Studies which have compared non-refluxing colon conduits to refluxing ileal conduits show similar rates of upper tract deterioration. While a properly functioning non-refluxing ureteral anastomosis does prevent pressure transmission to the upper urinary tract, this benefit is in part offset by a higher incidence of ureterointestinal stricture. This has caused some to question the benefit of creating non-refluxing anastomoses in any form of urinary diversion whether conduit or continent. There is no impact on metabolic issues or stone formation.

Stein JP, Skinner DG: Orthotopic urinary diversion, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 3, chap 82, pp 2630-2632.

Question #84 **ANSWER=A**

This patient has symptoms characteristic of hypovolemic hypernatremia. This has occurred due to water loss from his diabetes insipidus without the ability to replace water or electrolytes orally. It is essential to first restore plasma volume with a relatively isotonic solution like lactated Ringers. The hypernatremia should then be corrected slowly with increased free water being given. Correction should decrease serum levels by no more than 10 mEq per day to prevent intracranial swelling and fatal complications. Hypertonic saline is contraindicated.

Hensle TW, Kearney MC: Fluids, electrolytes and nutrition, in Gearhart JP, Rink RC, Mouriquand PDE (eds): PEDIATRIC UROLOGY. Philadelphia, WB Saunders Co, 2001, chap 5, pp 51-57.

Question #85 **ANSWER=D**

Proximal urethrovaginal fistulae may present with constant dribbling incontinence. A large (5 mm) urethrovaginal fistula is unlikely to close with urinary drainage or fulguration. The safety of synthetic materials is not established in the setting of urinary fistula or prior urethral diverticulectomy. Surgical repair of the fistula should be undertaken two to three months post-operatively, and re-evaluation of the SUI done once the fistula is repaired. Long term indwelling urethral catheter is not recommended due to the development of chronic bacteruria and chronic inflammation.

Rovner ES: Urinary tract fistula, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 3, chap 72, p 2351.

Question #86 **ANSWER=D**

Major vascular injury is a rare but serious complication that occurs in 0.11-2% of cases. The right common iliac artery lies close to the mid-line at the inferior umbilicus. Therefore, with placement of an umbilical trocar, the right common iliac artery is the most commonly injured vessel, followed by the aorta. In contrast, the IVC is less frequently involved because of its lateral location in relation to the aorta. The common iliac veins are rarely involved given their posterior location in relation to the common iliac arteries.

Eichel L, McDougall EM, Clayman RV: Basics of laparoscopic urologic surgery, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 1, chap 7, p 207.

Bhoyrul S, Vierra MA, Nezhat CR, et al: Trocar injuries in laparoscopic surgery. JACS 2001;192:677-683.

Question #87 **ANSWER=C**

Ureteral obstruction is a recognized complication of reconstructive vascular procedures. The incidence of temporary, asymptomatic hydronephrosis is 12-30%, and mild or moderate permanent ureteral obstruction is seen in 2-14% of patients. Most patients develop ureteral obstruction within one year following the procedure; however, delays up to 14 years have been reported. Retroperitoneal fibrosis secondary to the surgical procedure is the most common cause of ureteral obstruction and is believed to be secondary to bleeding or excessive periureteral dissection. The other choices are all causes of obstruction, but not the most common.

Pais VM Jr, Strandhoy JW, Assimos DG: Pathophysiology of urinary tract obstruction, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 2, chap 37, p 1223.

Question #88 **ANSWER=E**

Among the parameters mentioned, only the presence of a positive urinalysis would preclude treatment with botulinum toxin. Patients of all ages have been treated with botulinum toxin and certainly patients with neurological conditions such as multiple sclerosis have been effectively and safely treated. Though no concrete data exist to define at what point it is reasonable to inject detrusor botulinum toxin after injection at other sites, most studies have suggested that at least three months pass between injections. The presence of Hirschsprung's disease is not a known contraindication to botulinum toxin bladder injections. A contraindication to botulinum toxin injection is the presence of an active urinary tract infection.

Reitz A, Stohrer M, Kramer G, et al: European experience of 200 cases treated with botulinum-A toxin injections into the detrusor muscle for urinary incontinence due to neurogenic detrusor overactivity. EUR UROL 2004;45:510-515.

Question #89 **ANSWER=D**

Ultrasonography is a very useful imaging modality for distinguishing kidney masses. Specifically, it is able to use the acoustic properties of the renal parenchyma to aid in diagnosis. The presence of an echogenic mass immediately eliminates the diagnosis of simple cyst, as these are usually echo-free. In addition, while lobar nephronia may appear like a mass on ultrasound, it is usually echo-poor or echo-free as well. RCCs, intrarenal

abscesses and angiomyolipoma all may be echogenic. Angiomyolipomas are usually echogenic, while RCCs and intrarenal abscesses have variable echogenicity. The key here is the speed-propagation artifact, which is due to the presence of fat in the tumor. In this case, the speed of sound in the fat is significantly slower than that in the soft tissue, which causes the unique artifact that confirms the diagnosis of angiomyolipoma.

Bhayani SB, Siegel CL: Urinary tract imaging: Basic principles, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 1, chap 4, pp 119-122.

Question #90 **ANSWER=E**

The first branch of the left renal artery is a small ureteral branch, but the first major branch is the posterior or dorsal artery. This artery primarily supplies the posterior segment of the kidney alone, but occasionally may provide a small branch to the apical segment as well. The anterior or ventral artery generally supplies branches to all but the posterior segment.

Anderson JK, Kabalin JN, Cadeddu JA: Surgical anatomy of the retroperitoneum, adrenals, kidneys, and ureters, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 1, chap 1, p 28.

Question #91 **ANSWER=E**

Re-vascularization is typically recommended in renal artery stenosis when > 75% occlusions occur either bilaterally or in a solitary single kidney. With severe renal loss (serum creatinine > 4 mg/dl), the likelihood of renal recovery is substantially reduced and revascularization is not recommended. Atherosclerotic renal vascular hypertension should be treated medically, typically with at least three medications before resorting to revascularization. Medial fibroplasia typically is not progressive and revascularization for this process is rare.

Novick AC, Fergany A: Renovascular hypertension and ischemic nephropathy, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 2, chap 36, pp 1174-1175.

Question #92 **ANSWER=E**

Hypokalemia, an elevated serum aldosterone level and a normal peripheral renin level suggest primary hyperaldosteronism. The CT shows no adrenal mass suggesting adrenal hyperplasia. An MRI with T2 weighted images is useful in cases of a pheochromocytoma but this is not suggested by the biochemical data. An MIBG scan lacks sensitivity. Venous localization

studies are most useful in this case. Venous localization studies demonstrate convincingly the pathology is from the left adrenal, suggesting unilateral hyperplasia. Spironolactone would be the first treatment. If the hypertension and hyperkalemia are not corrected, a left adrenalectomy would be indicated.

Vaughan ED Jr, Blumenfeld JD: Pathophysiology, evaluation, and medical management of adrenal disorders, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 2, chap 53, p 1856.

Question #93 **ANSWER=C**

The main arterial supply of the sigmoid colon is from the sigmoid and superior hemorrhoidal branches of the inferior mesenteric artery (IMA). The major collateral vessels are the middle and inferior hemorrhoidal arteries which arise from the internal iliac artery. They anastomose freely with the superior hemorrhoidal branches. It is distributed to the rectum, anastomosing with the inferior vesical artery, superior rectal artery, and inferior rectal artery. The right colic artery arises from the superior mesenteric artery and does not have collaterals to the distal colon. The superior hemorrhoidal arteries and sigmoid arteries are continuations of the IMA and is filled retrograde when the IMA is ligated. The middle sacral artery arises from the back of the aorta and gives some blood supply to the rectum.

Dahl DM, McDougal WS: Use of intestinal segments in urinary diversion, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 3, chap 80, pp 2535-2536.

Question #94 **ANSWER=D**

While tamsulosin had been the most widely publicized alpha-1a blocker to be associated with intra-operative floppy iris syndrome (IFIS) during cataract surgery, other alpha-blockers have as well (including super-selective and less selective agents). Although not eliminating the risk of IFIS, discontinuing these medications one to two weeks prior to surgery lowers the incidence.

Srinivasan S, Radomski S, Chung J, et al: Intraoperative floppy-iris syndrome during cataract surgery in men using alpha-blockers for benign prostatic hypertrophy. J CATARACT & REFRACTIVE SUR 2007;33:1826-1827.

Blouin MC, Blouin J, Perreault S, et al: Intraoperative floppy-iris syndrome associated with alpha-1-adrenoreceptors: Comparison of tamsulosin and alfuzosin. J CATARACT & REFRACTIVE SUR 2007;33:1227-1234.

Dhingra N, Rajkumar KN, Kumar V: Intraoperative floppy iris syndrome with doxazosin. EYE 2007;21:678-679.

Question #95 **ANSWER=E**

Excess circulating glucocorticoids may be due to adrenal adenoma or carcinoma, or to ectopic secretion of ACTH or CRH. This patient has no evidence of Cushing's disease or ACTH dependent disease. She most likely has a contralateral adrenal source and glucocorticoid suppression with metyrapone is the most appropriate next step. Agents include aminoglutethimide, which blocks the conversion of cholesterol to pregnenolone; metyrapone, which blocks the conversion of 11-desoxycortisol to cortisone. Patients given aminoglutethimide are prone to develop adrenocortical insufficiency because aldosterone production is also impaired. Metyrapone does not normally result in salt wasting because of increased production of desoxycorticosterone, a potent mineralocorticoid. A right adrenalectomy in a patient with a solitary adrenal gland would commit the patient to lifelong steroid replacement.

Vaughan ED Jr, Blumenfeld JD: Pathophysiology, evaluation, and medical management of adrenal disorders, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 2, chap 53, p 1836.

Question #96 **ANSWER=E**

In patients with prostatic rhabdomyosarcoma who have failed chemotherapy and XRT, the best form of diversion, with the lowest complication rate is a transverse colon conduit. Once the patient has completed additional chemotherapy and no recurrence of malignancy has occurred for a minimum of two years, conversion to a continent urinary diversion can be considered.

Ritchey ML, Shamberger RC: Pediatric urologic oncology, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 4, chap 130, p 3883.

Question #97 **ANSWER=C**

This patient has dangerously elevated intravesical pressures and a continuously draining ileovesicostomy will permit low pressure bladder emptying. An indwelling catheter has the risk of UTI, stones, cancer and urethral erosion. The incompetent outlet of the ileovesicostomy acts as a “pop off" as the bladder fills and therefore the intravesical pressure will remain safe.

Bladder neck fascial sling is not necessary as it is unlikely that this individual will have stress incontinence per urethra given her high abdominal LPP and her limited mobility. She is a quadriplegic and catheterization following augmentation cystoplasty through an abdominal stoma or her urethra increases her risks, dependence on a caretaker, and is not practical.

Moy ML, Wein AJ: Additional therapies for storage and emptying failure, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters, CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 3, chap 70, p 2297.

Question #98 **ANSWER=A**

Collecting duct carcinoma is an unusual and aggressive type of renal tumor. While this patient is at risk for disease recurrence and progression, she is at this time without evidence of disease and no further therapy is indicated. There are no data that demonstrate efficacy of any form of adjuvant therapy.

Campbell SC, Novick AD, Bukowski RM: Renal tumors, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 2, chap 47, pp 1622-1623.

Question #99 **ANSWER=D**

The treatment of hyperchloremic metabolic acidosis requires administration of alkalinizing agents or blockers of chloride transport. In patients in whom excessive sodium loads are undesirable, nicotinic acid or chlorpromazine may be administered to control the acidosis. Nicotinic acid and chlorpromazine inhibit cyclic AMP and thereby impede chloride transport. Furosemide will not correct the metabolic acidosis. Bicitra, sodium bicarbonate, and Polycitra all contain significant amounts of sodium which could potentiate the congestive heart failure.

Dahl DM, McDougal WS: Use of intestinal segments in urinary diversion, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 3, chap 80, p 2572.

Adams MC, Joseph DB: Urinary tract reconstruction in children, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 4, chap 124, p 3681.

Question #100 **ANSWER=A**

The prevention of DVT in patients undergoing anti-incontinence and pelvic reconstructive surgeries should be dictated by preoperative individual patient and procedure specific DVT risk factors. In an uncomplicated patient without risk factors for DVT undergoing an anti-incontinence procedure for the treatment of stress urinary incontinence, early postoperative ambulation is considered adequate prophylaxis against postoperative DVT.

Forrest JB, Clemens JQ, Finamore P, et al: Best practice policy statement for the prevention of deep vein thrombosis in patients undergoing urologic surgery. PREVENTION OF DVT AFTER UROLOGIC SURGERY BEST PRACTICE STATEMENT. American Urological Association Education and Research, Inc, 2008. http://www.auanet.org/content/guidelines-and-quality-care/clinical-guidelines/main-reports/dvt.pdf

Question #101 **ANSWER=A**

Toxic metabolic effects secondary to drug reabsorption of methotrexate from intestinal mucosa used in urinary tract reconstruction can occur. Vigorous hydration, alkalinization of the urine, and catheter drainage can prevent this complication. The other agents given do not display a significantly increased toxicity because of intestinal reabsorption. Methotrexate is the smallest molecule of those listed, and therefore most likely to be absorbed.

Dahl DM, McDougal WS: Use of intestinal segments in urinary diversion, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 3, chap 80, pp 2573-2574.

Question #102 **ANSWER=D**

The questions for this peripubertal boy with intermittent testicular pain are whether he has intermittent torsion and whether the lesion in the testis requires excision. With a normal physical examination; i.e., no horizontal lie to the testis, it is difficult to diagnose intermittent torsion especially since the problem has been evident for only two weeks. The lesion in the right testis is clearly a cyst by ultrasound and treatment for this would be observation with follow-up ultrasound in three months. True simple cysts of the testis are usually non-palpable, usually subtunical near the mediastinum of the testis, and rarely change on follow-up ultrasound. Complex cysts or cysts with calcification tend to be more associated with malignancy and require more aggressive management.

Garrett JE, Cartwright PC, Snow BW, Coffin CM: Cystic testicular lesions in the pediatric population. J UROL 2000;163:928-936.

Question #103

ANSWER=A

The only recommended test prior to surgery, beyond those already mentioned, is a urinalysis. A positive urinalysis may trigger other testing. PSA was normal within the last year and need not be repeated. Cystoscopy, uroflowmetry, and postvoid residual testing are all optional. Cystoscopy may be appropriate if the size of the prostate is in doubt, particularly if it may be too large for endoscopic management. Uroflowmetry, although not specific, may be a reasonable indicator of bladder outlet obstruction. Pressure flow testing is the best assessment for outlet obstruction but is costly, invasive, and not recommended routinely unless the diagnosis is in doubt - for example, younger men with small prostates and severe LUTS, or if there is concern for neurogenic detrusor dysfunction.

Fitzpatrick JM: Minimally invasive and endoscopic management of benign prostatic hyperplasia, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 3, chap 88, pp 2830-2831.

Question #104

ANSWER=C

Urethral carcinoma is more common in women, and may involve either the anterior or posterior urethra. The location of the primary tumor will dictate the primary landing zone. The anterior (distal) urethra and labia drain to the superficial and then deep inguinal nodes, while the posterior (proximal) urethra drains primarily to the external iliac, and then secondarily to the hypogastric and obturator lymph nodes.

Sharp DS, Angermeier KW: Surgery of penile and urethral carcinoma, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 1, chap 32, p 1019.

Question #105

ANSWER=E

The likely cause of this child's breakthrough infections is dysfunctional elimination syndrome, which may be present in as many as 20% or more of children with VUR. The enuresis and constipation are indicative of abnormal function. While she may ultimately need reimplantation, it is prudent to attempt to control her voiding dysfunction before undertaking surgical repair. Correction of VUR will not treat the underlying pathology. Her voiding dysfunction includes both bladder and bowel components and both need to be addressed with a timed voiding regimen and effective treatment of constipation. Oxybutynin will exacerbate the constipation and should be used only in refractory cases unresponsive to timed voiding and bowel management.

Yeung CK, Sihoe JD, Bauer SB: Voiding dysfunction in children: Non-neurogenic and neurogenic, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 4, chap 123, pp 3618-3620.

Shortliffe LMD: Infection and inflammation of the pediatric genitourinary tract, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 4, chap 112, pp 3261-3262.

Question #106 **ANSWER=D**

Sixteen-dot plication for correction of Peyronie's disease is a simple and non-extirpative method to straighten the penis. The most common postoperative complaint in a series of 132 patients was penile shortening (41%) followed by suture pain/discomfort (12%), pain with erection (11%), narrowing of the phallus (9%), decreased penile sensation (6%) and hematoma formation (4%).

Jordan GH: Peyronie's disease, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 1, chap 25, p 829.

Dean R, Lue T: Penile plication using the 16-dot technique, in Levine L (ed): PEYRONIE'S DISEASE. Totowa, NJ, Humana Press, 2007, pp 149-159.

Question #107 **ANSWER=A**

Genetic alterations on chromosome 3 are common in the clear cell variant of RCC but are uncommonly found in the other histologic variants, suggesting distinct pathways to tumorigenesis. The VHL tumor suppressor gene located at chromosomal locus 3p25 is mutated in approximately 50% of clear cell type RCC. The mutations of this gene result in decreased expression of hypoxia inducible factor 1 (HIF1) and increased expression of vascular endothelial growth factor 1 (VEGF1), thereby resulting in increased angiogenesis.

Campbell SC, Novick AD, Bukowski RM: Renal tumors, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 2, chap 47, pp 1585-1586.

Question #108 **ANSWER=D**

A number of recognizable syndromes are associated with an increased incidence of Wilms' tumor. Three syndromes that are well known to be at high risk for Wilms' tumor development

include Denys-Drash syndrome (male pseudohermaphroditism manifested by proximal hypospadias and cryptorchidism, membrano-proliferative glomerulonephritis, and nephroblastoma), Beckwith-Wiedemann syndrome (macroglossia, nephromegaly, hepatomegaly) and WAGR syndrome (Wilms' tumor, aniridia, gonadoblastoma, and mental retardation. In patients with Denys Drash syndrome, the kidneys need to be monitored carefully and removed as renal failure occurs.

Ritchey ML, Shamberger RC: Pediatric urologic oncology, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 4, chap 130, pp 3885-3886.

Question #109 **ANSWER=A**

Normal bladder compliance defined as the change in bladder volume divided by the change in detrusor pressure, should be > 12. Patients with decreased bladder compliance are at great risk for development of upper tract deterioration. The amplitude of phasic involuntary bladder contractions is of little prognostic value due to their transient nature. Detrusor LPP of > 40 cm H_2O is a risk factor for upper tract deterioration however it is not as significant as poor bladder compliance. Neither detrusor areflexia nor increased urethral closure pressures are independent risk factors for hydronephrosis unless associated with elevated storage pressures.

Peterson AC, Webster GD: Urodynamic and videourodynamic evaluation of voiding dysfunction, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 3, chap 58, p 1993.

Question #110 **ANSWER=A**

This patient has CT scan findings that are pathognomonic of angiomyolipoma. Negative Hounsfield units confirm the presence of fat in this lesion, even though this can only be observed in a small region. No treatment is indicated in an asymptomatic patient with a relatively small angiomyolipoma but follow up with periodic CT scans is appropriate. Extension into the perinephric fat and even lymph node involvement can be found in association with angiomyolipoma and is thought to represent a secondary site of origin rather than a metastatic lesion. The presence of fat on a CT image is diagnostic.

Campbell SC, Novick AD, Bukowski RM: Renal tumors, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 2, chap 47, p 1579.

Question #111 **ANSWER=D**

The entire two liters of isotonic fluid are lost from the extracellular fluid (ECF). Since the loss is isotonic, the osmolality of the ECF did not change and no water moved out of the cells. The two liters of ingested pure water are distributed throughout the entire body water compartment; one-third remains in the ECF, and two-thirds move into the cells. The addition of pure water lowers the osmolality. Even though the decreased ECF volume would stimulate ADH secretion, the reduced osmolality would inhibit it via the hypothalamic osmoreceptors. Osmoreceptor input usually predominates during such "conflicts" unless the ECF volume depletion is very large. Renin and aldosterone secretions would increase because of the decreased ECF volume.

Shoskes DA, McMahon AW: Renal physiology and pathophysiology, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 2, chap 35, p 1137.

Question #112 **ANSWER=E**

The pharmacokinetic profile of the PDE5 inhibitors differs mainly in terms of the half life, with tadalafil having a significantly longer half life (17.5 hours) than vardenafil or sildenafil (4-6 hours). The other principle difference is in absorption with a concomitant fatty meal. Both vardenafil and sildenafil have decreased absorption with a high fat meal while the absorption of tadalafil is not affected by food consumption. Many studies show that at least four to six attempts may be needed to demonstrate that a patient will respond to PDE5 inhibitors. This patient has had an adequate trial of tadalafil and taking it on an empty stomach would not improve its efficacy. He has already been given the maximum FDA approved dose of tadalafil and increasing his dose will only increase the incidence of side effects. No level one evidence exists that switching PDE5 inhibitors will improve efficacy. Initiating treatment with intracorporal alprostadil would be a reasonable next step to efficaciously treat his erectile dysfunction.

Carson C: Phosphodiesterase type 5 inhibitors: State of the therapeutic class. UROL CLIN N AM 2007;34:508-509.

Question #113 **ANSWER=D**

Current literature has challenged the classical teaching that oxygen exposure increases the likelihood of pulmonary toxicity in patients treated with bleomycin. In this study the factors associated with postoperative pulmonary problems were positive fluid balance, amount of blood transfused, surgical time, estimated blood loss, and forced vital capacity, while the fraction of inspired oxygen was not a predictor of adverse outcome. Avoiding overhydration was the most important factor in limiting pulmonary problems.

Richie JP, Steele GS: Neoplasms of the testis, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 1, chap 29, p 924.

Donat SM, Levy DA: Bleomycin associated pulmonary toxicity. Is perioperative oxygen restriction necessary? J UROL 1998;160:1347-1352.

Question #114 **ANSWER=C**

Several articles have pointed out that contrast agents may occasionally be toxic, especially in the diabetic or multiple myeloma patient. However, the most important factor in avoiding the development of acute renal failure after intravenous administration of contrast agent is adequate hydration followed by the correct dosage of the contrast agent. Pre-existing cardiovascular disease alone is not a significant risk factor nor is a history of drug allergies or allergic reactions. The presence of diabetes mellitus alone is not a risk factor unless accompanied by dehydration.

Bhayani SB, Siegel CL: Urinary tract imaging: Basic principles, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 1, chap 4, p 113.

Question #115 **ANSWER=B**

The prevalence of asymptomatic bacteruria is higher in women with diabetes mellitus. Women with type II diabetes mellitus and asymptomatic bacteruria are at higher risk for developing a symptomatic UTI. However, patients with type I diabetes mellitus and asymptomatic bacteruria are not at higher risk for this occurrence. There are no known risks of developing symptomatic UTIs in hypertension or thyroid disorders.

Geerlings SE, Stolk RP, Camps JL, et al: Consequences of asymptomatic bacteriuria in women with diabetes mellitus. ARCHIV INT MED 2001;161:1421-1427.

Question #116 **ANSWER=C**

A likely cause of late onset nocturnal incontinence following orthotopic ileal neobladder is mucous retention resulting in incomplete bladder emptying. Patients with this condition may still maintain good daytime continence by voluntary contraction of the external sphincter and frequent voiding, but at night pelvic floor relaxation, decreased urethral closing pressure, and hypertonic urine production with an obligate water loss overcome these compensatory behaviors. This problem is best managed initially by catheterization of the pouch to determine

PVR irrigating the mucous, and containing optimal drainage of the pouch prior to retiring. If nocturnal incontinence persists, setting an alarm to wake during night can be beneficial.

Stein JP, Skinner DG: Orthotopic urinary diversion, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 3, chap 82, pp 2619-2621.

Question #117 **ANSWER=D**

Ischemic necrosis of the augmented bladder wall may result from inefficient bladder emptying and chronic overdistention. Patient noncompliance with intermittent catheterization and mucus plugs may contribute to chronic overdistention, but are not the primary cause for bladder rupture after augmentation cystoplasty. A lack of detrusor sensation, chronic inflammation and the presence of bladder calculi may also be contributing factors. Bladder malignancy following enterocystoplasty is a rare occurrence and not found to be associated with spontaneous bladder perforation.

Adams MC, Joseph DB: Urinary tract reconstruction in children, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 4, chap 124, p 3685.

Question #118 **ANSWER=E**

One study identified the major difference between SWL and ureteroscopy for lower pole stones was return to work, specifically 3.3 days following SWL compared to 8.5 days following ureteroscopy. Although SWL arguably provides acceptable first line therapy for stones 1 cm or less based on the initial randomized trial, ureteroscopy has been touted as a promising alternative that can improve the stone free rate with little additional morbidity over SWL. However, in this small trial investigators were unable to validate the hypothesis that ureteroscopy was superior to SWL. The stone free rate after ureteroscopy and SWL for lower pole stones of less than or equal to 1 cm was remarkably low and not statistically different between the two modalities. While the results of the study support that either SWL or ureteroscopy may be used in this situation, practitioners and patients must be cognizant of the limitations of treatment modalities that rely on spontaneous fragment passage to achieve a stone-free state.

Pearle MS, Lingeman JE, Leveillee R, et al: Prospective, randomized trial comparing shock wave lithotripsy and ureteroscopy for lower pole caliceal calculi 1 cm or less. J UROL 2005;173:2005-2009.

Question #119 **ANSWER=A**

Most adenocarcinomas of the bladder represent metastases from other primary adenocarcinomas such as colon, breast, or lung cancers. Hence, a primary source other than the bladder must be considered, and this patient should undergo colonoscopy for further evaluation prior to administration of definitive therapy.

Messing EM: Urothelial tumors of the bladder, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 3, chap 75, p 2422.

Question #120 **ANSWER=C**

Although the kidney contralateral to a multicystic dysplastic kidney does exhibit compensatory hypertrophy at birth, this occurs rapidly after birth, and by age two years, the hypertrophied kidney exhibits a GFR significantly greater than one normal sized kidney. This is not correlated with the removal of the multicystic kidney. Studies have demonstrated that compensatory renal growth can begin prenatally. Because the placenta provides the excretory function for the fetus, an increased excretory burden on the kidney is not required to initiate compensatory growth. Rather, alterations in growth factors or inhibitors presumably modulate the prenatal changes. Compensatory increase in renal mass in the adult is largely due to cellular hypertrophy. Neonatal glomerular hypertrophy results also from increased glomerular basement membrane surface area and proliferation of mesangial matrix.

Chevalier RL, Roth JA: Renal function in the fetus, neonate and child, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 4, chap 107, p 3159.

Question #121 **ANSWER=D**

To stabilize glycemic control in patients taking insulin, frequent glucose monitoring should be performed, with insulin dosages adjusted appropriately. On the day before surgery, long-acting insulin can be continued throughout the day if the patient's control is good, particularly if the patient is using glargine. Oral agents are generally discontinued before surgery. Long-acting sulfonylureas (e.g., chlorpropamide [Diabinese]) are stopped 48 to 72 hours before surgery, while short-acting sulfonylureas, other insulin secretagogues, and metformin [Glucophage] can be withheld the night before or the day of surgery. No recommendations exist for discontinuation of thiazolidinediones (e.g. rosiglitazone [Avandia], pioglitazone [Actos]) before surgery; their extremely long duration of action probably indicates no rationale for stopping them at all.

Marks JB: Perioperative management of diabetes. AM FAM PHYSICIAN 2003;67:93-100.

Question #122 **ANSWER=D**

The normal PSA for a man under 50 is < 2.5, and in light of the low testosterone, this patient should have a much lower PSA level. Hence, a PSA of 2.1 ng/ml in this setting is suspicious for cancer and a prostate biopsy should be performed. There is no role for a % free PSA estimation, as it will not alter management at this time. Alternatively, the PSA could be repeated after testosterone replacement. It may be risky to initiate exogenous testosterone without ruling out prostate cancer.

Lilja H, Piironen TP, Rittenhous HG, Micolajczyk SD, Slawin KM: Prostate specific antigen, in Vogelzang NG, Scardino PT, Shipley WU, Coffey DS (eds): GENITOURINARY ONCOLOGY, ed 2. Philadelphia, Lippincott Williams & Wilkins, 2000, chap 38A1, pp 638-650.

Carter HB, Allaf ME, Partin AW: Diagnosis and staging of prostate cancer, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 3, chap 94, p 2919.

Lue TF, Broderick GA: Evaluation of nonsurgical management of erectile dysfunction and premature ejaculation, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 1, chap 22, p 773.

Veltri R, Rodriguez R: Molecular biology, endocrinology, and physiology of the prostate and seminal vesicles, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 3, chap 85, pp 2684-2686.

Question #123 **ANSWER=C**

Pseudostratified columnar epithelium lines the urethra from the membranous area to the fossa navicularis where stratified squamous epithelium becomes predominant. Transitional cell epithelium lines the prostatic urethra to the membranous area. Neither columnar nor keratinized squamous epithelium is normally present in the male urethra.

Brooks JD: Anatomy of the lower urinary tract and male genitalia, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 1, chap 2, p 41.

Question #124

ANSWER=C

The American Urological Association Nephrolithiasis Guidelines Panel strongly recommends percutaneous nephrolithotomy as first line therapy for management of staghorn struvite renal calculi. The 2005 report of the Guidelines Panel states that all infected stone material should be eliminated to prevent recurrent infection lithiasis. After nephrolithotomy, hemiacidrin irrigation may be used to dissolve residual fragments. SWL for a struvite calculus requires multiple interventions and is unlikely to render the patient stone free. Ureteroscopy similarly is not likely to render the patient stone free. The urease inhibitor acetohydroxamic acid may be used to reduce the urinary saturation of struvite and decrease stone formation, however it should be noted that an increased incidence of DVT has been reported in patients receiving the medication. Ammonium chloride, methenamine hippurate and ascorbic acid have been reported to retard stone formation, but are not used as primary therapy.

Pietrow PK, Preminger GM: Evaluation and medical management of urinary lithiasis, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 2, chap 43, pp 1425-1426.

Preminger GM, Assimos DG, Lingeman JE, et al: AUA guideline on the management of staghorn calculi: Diagnosis and treatment recommendations. MANAGEMENT OF STAGHORN CALCULI GUIDELINE. American Urological Association Education and Research, Inc, 2005. http://www.auanet.org/content/guidelines-and-quality-care/clinical-guidelines.cfm?sub=sc

Question #125

ANSWER=A

Complexed PSA represents the fraction of total PSA that is circulating bound to other serum proteins, including antichymotrypsin and alpha-1 macroglobulin. Prostate manipulation including biopsy, cystoscopy, catheterization, and vigorous massage generally result in a transient increase in serum total PSA. Most of the rise in total PSA is contributed by the free (non-bound) component. In general, complexed PSA is the most stable component and relatively little rise occurs following prostate instrumentation. Complexed to total PSA ratio would decrease upon disproportionate free PSA increase. Due to the transient nature of PSA rise with prostate manipulation, PSA velocity is generally not affected.

Lynn NN, Collins GN, O'Reilly PH: Prostate manipulation has minimal effect on complexed prostate specific antigen levels. BJU INTERN 2000;86:65-67.

Gretzer MB, Partin AW: Prostate cancer tumor markers, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 3, chap 93, pp 2899-2900.

Question #126 **ANSWER=B**

The presence of autosomal recessive polycystic kidney disease varies depending on age. In older children, hepatosplenomegaly due to portal hypertension may be prominent and associated with renal interstitial fibrosis and cortical cystic disease. Autosomal dominant polycystic disease does not usually cause renal insufficiency at such an early age; the cysts are variable in size and occur throughout the kidney. Familial juvenile nephrophthisis and renal-retinal dysplasia are associated with renal cysts which are typically located in the medulla but the kidneys are usually shrunken and scarred. Renal cysts do occur in tuberous sclerosis but renal failure is usually attributed to multiple solid angiomyolipomas.

Glassberg KI: Renal dysgenesis and cystic disease of the kidney, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 4, chap 114, p 3315.

Question #127 **ANSWER=E**

The combination of LUTS and bladder pain with negative urine cultures suggest interstitial cystitis. Interstitial cystitis, in the strictest sense is a diagnosis of exclusion. The reason to perform a cystoscopy is to identify urothelial lesions such as carcinoma-in-situ, ulcerative lesions, bladder tumor, tubercular granulomas, or other treatable urothelial lesions. While glomerulations have been thought to be diagnostic for interstitial cystitis, they can only be detected with hydrodistention of the bladder under anesthesia, not routine cystoscopy. A urethral diverticulum, while potentially diagnosable with cystoscopy, is better diagnosed with pelvic MRI scan. Cystitis cystica and squamous metaplasia are common in middle aged women, and require no diagnostic testing or treatment.

Hanno PM: Painful bladder syndrome/Interstitial cystitis and related disorders, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 1, chap 10, pp 351-354.

Question #128 **ANSWER=A**

This patient has significant renal insufficiency and is at risk for further deterioration. There is a growing body of literature regarding the endourologic management of upper-tract TCC in this situation. Indeed, this patient is an ideal candidate for an endourologic approach given the need for renal parenchymal preservation and low grade non-invasive tumor. From a tumor standpoint there is a very low risk of progression. With close follow-up, recurrences can be treated by repeat endourologic techniques. Intravesical or percutaneous BCG is not indicated at this time as is supported by only anecdotal evidence.

Sagalowsky AI, Jarrett TW: Management of urothelial tumors of the renal pelvis and ureter, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 2, chap 49, pp 1672-1674.

Question #129 **ANSWER=E**

The femoral triangle, also known as Scarpa's triangle, is bounded laterally by the medial margin of the sartorius. The medial boundary is the adductor longus and the inguinal ligament is superior. The floor of the triangle is composed of the pectineus muscle medially and the iliopsoas laterally. The location of the saphenofemoral junction is estimated to be at a point two fingerbreadths lateral and two fingerbreadths inferior to the pubic tubercle. These landmarks are important in a lymphadenectomy for penile cancer.

Sharp DS, Angermeier KW: Surgery of penile and urethral carcinoma, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 1, chap 32, p 1003.

Question #130 **ANSWER=A**

A ureteral injury occurs in 1% of gynecological procedures. This usually results from failure to identify the ureter when attempting to obtain hemostasis. Provided there is a clear surgical field, ureteral injury due to confusing it with another structure or during occlusion of the uterine or ovarian vessels is distinctly unusual.

Brandes S, Coburn M, Armenakas N, McAninch JW: Diagnosis and management of ureteric injury: An evidence based analysis. BJU INT 2004;94:277-289.

Question #131 **ANSWER=C**

Immediate administration of intravesical agents following initial TURBT has been postulated to decrease tumor reimplantation and provide immediate therapeutic efficacy for microscopic residual disease. A number of randomized clinical trials have shown that TUR followed by immediate administration of a single dose of mitomycin C reduces recurrence rates when compared to TUR alone. These studies have also demonstrated that this effect is lost if administration is delayed by a day or more after TUR.

Jones JS, Campbell SC: Non-muscle-invasive bladder cancer (Ta, T1, and CIS), in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 3, chap 76, p 2453.

Hall MG, Chang SS, Dalbagni G, et al: Guideline for the management of nonmuscle invasive bladder cancer: (Stages Ta,T1, and Tis): 2007 update. MANAGEMENT OF NONMUSCLE INVASIVE BLADDER CANCER GUIDELINE. American Urological Association Education and Research, Inc, 2007. http://www.auanet.org/content/guidelines-and-quality-care/clinical-guidelines.cfm?sub=bc

Question #132 **ANSWER=A**

Urine volume is the difference between GFR and amount of water resorbed. If a normal adult has a GFR of 180 liters/day then 179 liters must be reabsorbed to have a urine volume of one liter. Anuria is described as urine volume that is virtually nil, i.e., less than 50 ml/day. Oliguria is substantially reduced urine volume (less than 30 ml/hour). Urine sodium concentration is usually below 25 mEq/l in volume depletion and above 40 mEq/l with normovolemia or acute tubular necrosis. A urinary sodium of only 8 mEq/l is most suggestive of prerenal azotemia. RTA and chronic pyelonephritis would not generally lower urinary sodium concentrations.

Shoskes DA, McMahon AW: Renal physiology and pathophysiology, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 2, chap 35, pp 1146-1150.

Question #133 **ANSWER=C**

The best initial treatment of genitourinary tuberculosis is triple drug treatment for two months followed by two drugs for four months. The best combination is INH, rifampin, and pyrazinamide. If the INH resistance is above 4% in the patient's community, addition of ethambutol or streptomycin to the three drugs is advised. In 1991, resistance to one or more antituberculosis drugs was noted in 14.2% of patients with tuberculosis in the United States; 9.5% of patients had resistance to isoniazid or rifampin. Drug resistant tuberculosis has an increased prevalence in patients who are HIV-positive and among people who counsel HIV patients . Isolated isoniazid-resistant tuberculosis infections should be treated with rifampin, pyrazinamide, and ethambutol for six months. For patients who have tuberculosis strains that are resistant to rifampin, an alternate regimen of isoniazid and ethambutol for 18 months or isoniazid, pyrazinamide, and streptomycin for nine months are recommended.

Wise GJ, Marrella, VK: Genitourinary manifestations of tuberculosis. UROL CLIN N AM 2003;30(1):111-121.

Question #134 **ANSWER=C**

Intravesical BCG is generally well-tolerated, but patients should be monitored for systemic infection with BCG and treated appropriately. In the absence of bacteruria, patients with persistent (> 24 hours) high fevers (> 38.5° C) that do not respond to antipyretic therapy, should have BCG treatment discontinued and INH therapy started. This may be an early sign of a systemic BCG infection. Double and triple therapy is reserved for patients who present with pulmonary or hepatic involvement with BCG.

Jones JS, Campbell SC: Non-muscle-invasive bladder cancer (Ta, T1, and CIS), in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 3, chap 76, pp 2456-2459.

Question #135 **ANSWER=D**

Approximately half of the children on CIC have chronic bacteriuria. Despite suppressant antibiotic therapy, the majority of these patients continue to have chronic bacteriuria and suppressant therapy often leads to colonization with more resistant strains. Children on CIC who are clinically well without evidence of pyelonephritis or reflux require no treatment for chronic bacteriuria. Cystoscopy holds no value in this circumstance. Sterile intermittent catheterization has not been shown to decrease bacteriuria consistently when compared to clean CIC. Intravesical antibiotics are also uncertain in terms of benefit in this circumstance and are not even considered unless the child is suffering consequences of recurring symptomatic UTI and has failed other approaches.

Yeung CK, Sihoe JD, Bauer SB: Voiding dysfunction in children: Non-neurogenic and neurogenic, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 4, chap 123, pp 3635-3637.

Question #136 **ANSWER=D**

The patient has oligospermia. No correctable abnormalities are present. Further evaluation with ultrasonography for a subclinical varicocele is not helpful. Since two semen analyses show the same defects, a repeat semen analysis will be of no value. If the two analyses were discrepant, another specimen would be useful. No indication for antisperm antibody testing is present. Intrauterine insemination is most effective for cervical-factor infertility or isolated oligospermia.

Sigman M, Jarow JP: Male infertility, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 1, chap 19, p 622, 651.

Question #137 **ANSWER=B**

The discovery of the VHL gene and subsequent elucidation of the dysregulated tumor pathways in RCC has led to targeted therapy for this disease. Recently the FDA has approved sorafenib (Nexavar) and sunitinib (Sutent) for the second-line treatment of advanced RCC after failed cytokine therapy. The fast-track approval of sorafenib was in large part due to the preliminary results of a large randomized trial conducted in over 100 centers in 19 countries. In a planned preliminary analysis, sorafenib doubled the progression-free survival compared to placebo and was associated with a greater than 50% reduction in the risk of progression. The trial was designed to determine whether treatment provides an overall survival benefit and analysis of this endpoint is premature. Although major tumor responses including complete responses are rare with this drug, the majority of patients exhibit tumor regression. These drugs are synthetic small molecules that inhibit a number of kinases important in tumor cell proliferation and tumor angiogenesis. Supportive care and hospice referral would be premature in this patient. Although gemcitabine based-chemotherapy regimens show activity and are being studied in kidney cancer, their role is in patients with rapidly progressing disease and unusual histologies including sarcomatoid, collecting duct, and renal medullary carcinoma. Other cytokine therapy following failure of high-dose IL-2 is rarely beneficial. Allogeneic stem cell transplant to produce a graft vs. tumor response is highly experimental and conducted in only a few centers in preliminary clinical trials.

Escudier B, Eisen T, Stadler WM, et al: Sorafenib for treatment of renal cell carcinoma: Final efficacy and safety results of the phase III treatment approaches in renal cancer global evaluation trial. J CLIN ONCOL 2009;27:3312-3318.

Question #138 **ANSWER=B**

The neonatal serum creatinine of 1.2 mg/dl reflects maternal creatinine and is not a matter of concern. Maternal diabetes mellitus (insulin-dependent) poses an increased risk for sacral agenesis and bladder dysfunction in the infant. Maternal hypertension is associated with some risk of renal vein thrombosis. Some infants do not pass urine in the first 24 hours. At 20 hours, no studies are indicated in the absence of other problems. Multicystic kidney is congenital, but not hereditary.

Bauer SB, Koff SA, Jayanthi VR: Voiding dysfunction in children: Neurogenic and non-neurogenic, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 8. Philadelphia, WB Saunders Co, 2002, chap 64, pp 2231-2283.

Yeung CK, Sihoe JD, Bauer SB: Voiding dysfunction in children: Non-neurogenic and neurogenic, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 4, chap 123, p 3644.

Question #139 **ANSWER=C**

Extrinsic ureteral obstruction is associated with stent failure in nearly half of patients within a year. A recent study of 101 patients treated with indwelling stents revealed extrinsic obstruction due to cancer; renal insufficiency (serum creatinine > 1.3 mg/dl); and obstruction following XRT or chemotherapy were predictors of stent failure. Patients with metastatic disease requiring systemic therapy may be best served with a percutaneous nephrostomy rather than a ureteral stent. Other alternatives, such as an extra-anatomic nephrovesical stent, can be considered as well.

Chung SY, Stein RJ, Landsittel D, et al: A 15-year experience with the management of extrinsic ureteral obstruction with indwelling ureteral stents. J UROL 2004;172:592-595.

Docimo SG, Dewolf WC: High failure rate of indwelling ureteral stents in patients with extrinsic obstruction: experience at 2 institutions. J UROL 1989;142:277-279.

Question #140 **ANSWER=E**

LUTS are common following brachytherapy and often seem to coincide with the half-life of the isotope (60 days for iodine-125 and 17 days for palladium-103). Usually these symptoms improve over time and respond to alpha-blocker therapy. Patient selection for brachytherapy is extremely important to avoid severe voiding dysfunction and urinary retention. Patients with significant pretreatment symptoms despite medical therapy are poor candidates for an implant as they are much more likely to have severe post-implant LUTS and a higher risk for urinary retention. In brachytherapy series, 2-8% of patients require TURP often within the first six months post-implant because of urinary retention. TURP should be delayed at least three months after the initial seed implantation. The resection should not be aggressive with preservation of apical tissue. Prior to three months, retention is best managed by CIC. Finasteride and leuprolide acetate would require months before any possible benefit and would not be effective in a patient with a small gland. A suprapubic catheter would provide drainage but has the associated problems of infection and bladder irritation. TUMT is contraindicated following radiation therapy.

Scherr D, Bosworth J, Steckel J: Complications of brachytherapy in the treatment of localized prostate cancer, in Taneja SS, Smith RB, Ehrlich RM (eds): COMPLICATIONS OF UROLOGIC SURGERY, ed 3. Philadelphia, WB Saunders Co, 2001, pp 421-423.

D'Amico AV, Crook J, Beard CJ, et al: Radiation therapy for prostate cancer, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 3, chap 100, p 3026.

Question #141 **ANSWER=A**

The genitofemoral nerve penetrates the body of the psoas muscle at about L3/L4 where it travels caudally along its surface and is vulnerable to suture injury. The other nerves are all lateral or dorsal to the psoas muscle and removed from the operative site.

Anderson JK, Kabalin JN, Cadeddu JA: Surgical anatomy of the retroperitoneum, adrenals, kidneys, and ureters, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 1, chap 1, p 3.

Question #142 **ANSWER=B**

Azoospermic men have an increased incidence of chromosomal abnormalities. Patients thought to have non-obstructive azoospermia should have both a karyotype and Y-chromosome microdeletion analysis. Of the three types of Y chromosome deletions, types a and b rarely if ever have sperm production in the testicles. Type c deletions have patchy sperm production in the testicles some of the time. The latter may benefit from testicular sperm retrieval but the types a and b deletions will likely not. With an FSH three times normal this patient will not have obstructive azoospermia and thus scrotal exploration and a vasogram are not indicated. Fine needle testicular aspiration for diagnosis is unnecessary. Both needle aspiration and testicular microdissection and cryopreservation of sperm are premature without prior genetic testing. In addition needle aspiration is less successful in retrieving sperm from non-obstructed azoospermic patients than open testicular sperm extraction. Semen fructose determination may demonstrate a low fructose concentration in patients with ejaculatory duct obstruction or congenital bilateral absence of the vas deferens. Both of these conditions are associated with low volume acidic semen specimens which are not present in this patient.

Jarow J, Sharlip ID, Belker AM, et al: Report on optimal evaluation of the infertile male: An AUA best practice policy and ASRM Practice Committee report. EVALUATION OF THE INFERTILE MALE BEST PRACTICE STATEMENT. American Urological Association Education and Research, Inc, 2001, p 9. http://www.auanet.org/content/guidelines-and-quality-care/clinical-guidelines/main-reports/optimalevaluation.pdf

Question #143 **ANSWER=A**

This rounded non-enhancing lesion of the kidney is consistent with a hyperdense cyst. Hyperdense cysts are characteristically more dense than the kidney on noncontrast imaging (typically up to 80 HU) and do not enhance upon contrast administration. In this case, the increase in density of 3 HU is not significant and suggests a nonenhancing lesion. The history of melanoma should lead the clinician to be suspicious of a metastatic lesion, and if the mass were enhancing, needle biopsy would be indicated prior to resection.

Campbell SC, Novick AD, Bukowski RM: Renal tumors, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 2, chap 47, pp 1569-1575.

Question #144 **ANSWER=D**

The management of the infant with a PUV depends on the severity of the obstruction and the degree of any renal dysplasia present. The main problems arise in management of the infant with severe obstruction and compromised renal function with dehydration, acidosis, and sepsis. Initially, a small infant feeding tube, placed transurethrally, can provide bladder drainage. Once stabilized, valve ablation can be undertaken. Vesicostomy is reserved for infants who cannot undergo primary valve ablation because of the inadequate size of their urethra or for very small, unstable infants. If initial bladder level drainage does not result in satisfactory clinical improvement, temporary supravesical diversion may be considered, however the vast majority of these patients will be found to have renal dysplasia, not urethral vesical obstruction as the etiology the penile of the persistently elevated creatinine.

Casale AJ: Posterior urethral valves and other urethral anomalies, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 4, chap 122, pp 3591-3594.

Question #145 **ANSWER=D**

Clinically, RTA is associated with recurrent urolithiasis, calcium phosphate stones, medullary sponge kidney, nephrocalcinosis, hypocitraturia, hypokalemia, metabolic acidosis and urine pH greater than 5.5. Hypocitraturia is the most important metabolic factor for stone formation in type 1 (distal) RTA although hypercalciuria can occur. Potassium citrate (or bicarbonate) corrects the systemic acidosis and normalizes urinary citrate. If hypercalciuria persists in spite of alkali therapy, thiazides should be added.

Pearle MS, Lotan Y: Urinary lithiasis: Etiology, epidemiology, and pathogenesis, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 2, chap 42, p 1380.

Question #146 **ANSWER=D**

The site of the stoma should be selected preoperatively. This is done with the patient in a sitting and supine position. Care is taken to place the stoma over the rectus muscle at least 5 cm from the planned incision line. The point chosen should be well away from any skin creases, scars, the umbilicus, belt lines or bony prominences. All stomas should be placed

through the belly of the rectus muscle located at the peak of the infraumbilical fat roll. If the stoma is placed lateral to the rectus sheath, a parastomal hernia is likely to occur.

Dahl DM, McDougal WS: Use of intestinal segments in urinary diversion, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 3, chap 80, pp 2551-2552.

Question #147 **ANSWER=C**

DMSA is bound to renal proximal tubule cells in progressive amounts over three to six hours. Over time, there will therefore be less background activity and a higher tissue to background ratio. This is particularly important with poorly functioning kidneys. MAG-3, DTPA and Hippuran are all excreted. Functional assessment is done in the first three minutes after injection, during which time there is considerable background activity. Glucoheptonate is a hybrid that is both excreted and bound.

Bhayani SB, Siegel CL: Urinary tract imaging: Basic principles, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL'S UROLOGY, ed 9. Philadelphia, Saunders Elsevier, 2007, vol 1, chap 4, p 142.

Question #148 **ANSWER=C**

Epidemiologic studies have demonstrated that low calcium and increased animal protein consumption place an individual at risk to develop nephrolithiasis. Metabolic studies have demonstrated that increased sodium consumption results in increased calcium excretion and low calcium intake results in increased oxalate excretion. Borghi and associates studied men with recurrent calcium oxalate nephrolithiasis associated with hypercalciuria. Patients were randomized to one of the following diets: 1) low animal protein, 2) low calcium, 3) low sodium, and 4) normal sodium. Only patients on low sodium and normal calcium diet had a decreased incidence of stones. This finding, plus the knowledge that increased intake of a animal protein increases the risk of stones, results in the recommendation that patients with hypercalciuria should be placed on diets low in sodium and animal protein with normal calcium intake.

Borghi L, Schianchi T, Meschi T, et al: Comparison of two diets for the prevention of recurrent stones in idiopathic hypercalciuria. NEJM 2002;346:77-84.

Question #149 **ANSWER=D**

Prostate MRI scan, especially with combined endorectal and phase-array coils, is used in prostate cancer staging with up to 82% accuracy. The T1- and T2-weighted images are

helpful in differentiating between postbiopsy hemorrhage, which presents as a high T1 and a low T2 lesion, and prostate cancer, which presents as a low T1 and low T2 lesion.

Barnes AS, Tempany CMC: Image-guided minimally invasive therapy, in Richie JP, D'Amico (eds): UROLOGIC ONCOLOGY. Philadelphia, Elsevier Saunders, 2005, chap 7, p 115.

Question #150

ANSWER=A

Severe hyperkalemic cardiotoxicity must be treated immediately, not by lowering serum potassium concentration alone but preventing cardiac excitability and antagonizing the cardiotoxic effects of hyperkalemia. Thus, I.V. calcium gluconate is the initial treatment of choice. This must be followed by measures to immediately lower serum potassium since the duration of calcium effects are brief. Bicarbonate and glucose should be given next, but they are short-acting and exchange resins/dialysis should be planned for more long-term treatment.

Kale AS, Brewer ED: Management of renal failure in children, in Gonzales ET, Bauer SB (eds): PEDIATRIC UROLOGY PRACTICE. Philadelphia, Lippincott, Williams and Wilkins, 1999, chap 5, pp 79-90.